FOUNDED IN 1856

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

A.R.E.A. CONVENTION NUMBER

MARCH 17, 1952

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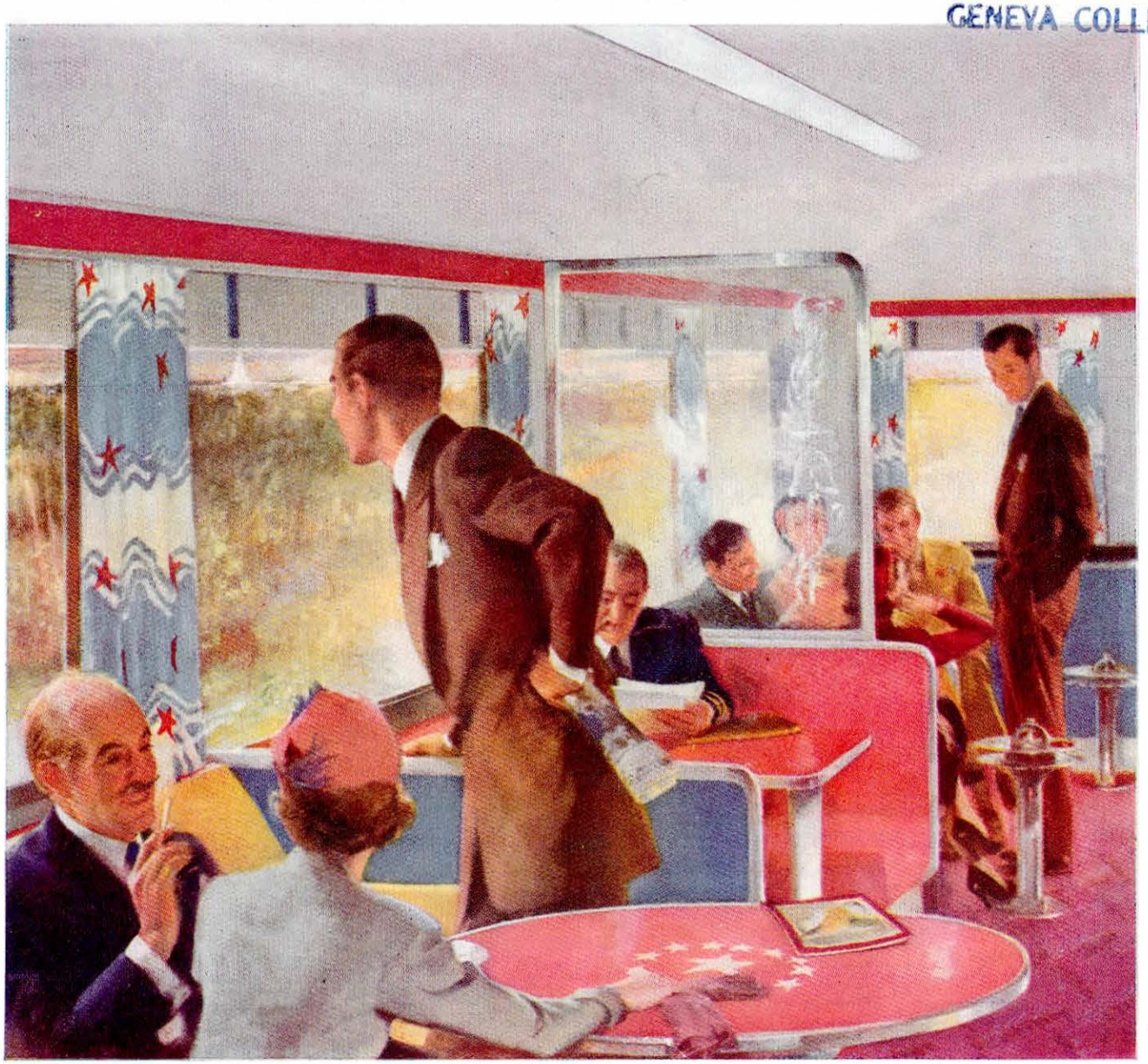

The Morning Congressional
The Senator
The Afternoon Congressional

Built for the Pennsylvania Railroad
by the Budd Company

Budd

6 MORE REASONS for *Nalco*

COMPLETE WEED and BRUSH CONTROL

Nalco Spray Cars, engineered to give precision chemical dosage and coverage, are added good reasons for using safe, powerful Nalco weed and brush control chemicals on your right-of-way.

Several Nalco formulas are available . . . specifics for grasses, weeds, annuals or perennials, and Nalco spray cars are equipped to spray two formulas simultaneously, when necessary, in correct proportions for effective control. Spray cars, each with precise metering and indicating equipment, are available without charge to railroads using Nalco weed control chemicals in tank car lots.

Write for data on spray car availability and Nalco chemicals to keep your right-of-way free of weeds and brush.

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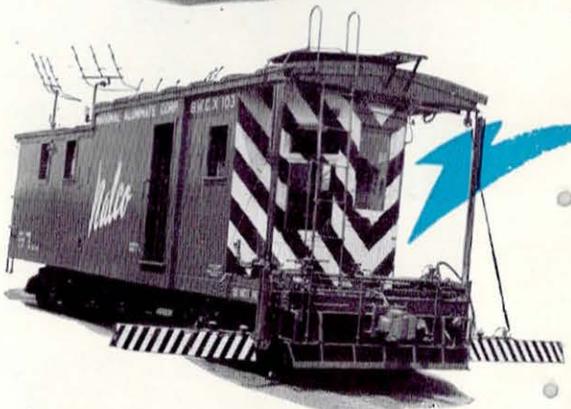
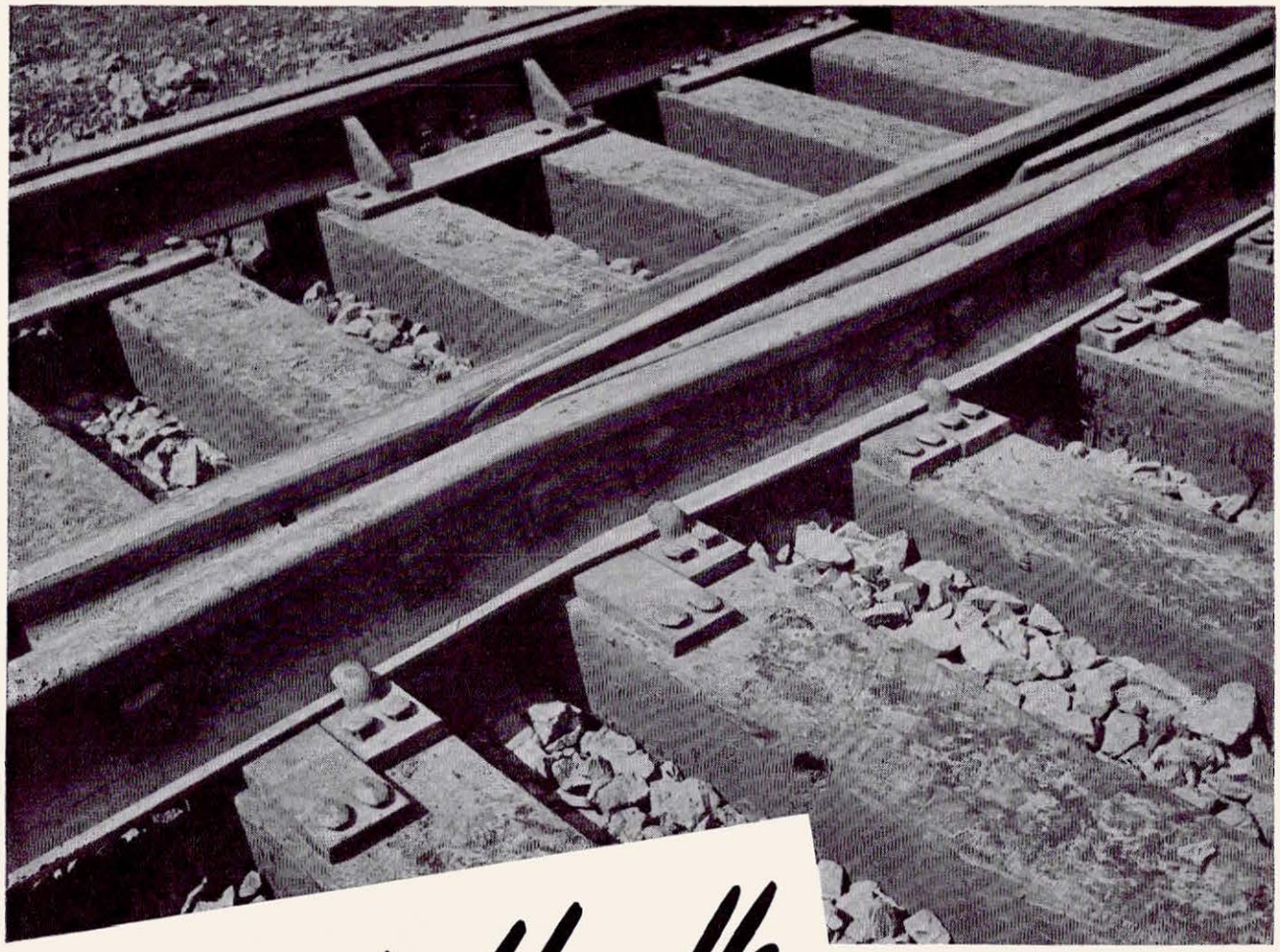
6200 West 66th Place • Chicago 38, Illinois

Canadian inquiries should be addressed to Alchem Limited, Burlington, Ontario

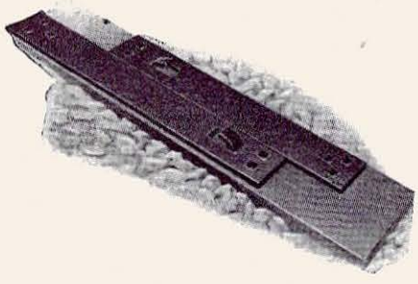


THE *Nalco* SYSTEM • Serving Railroads through Practical Applied Science

Six Nalco Spray Cars shown above have all gone into service within the past two years. Modern design, equipment and instrumentation assure maximum spraying control and labor-saving efficiency.



Easy to Handle
SIMPLE TO INSTALL



Next time you're putting in a frog, and want the work to go faster, call for some Bethlehem Twin Hook Frog Plates.

These unique plates are always used in pairs—never singly. They're so easy to handle and install—and any matching pair fits several *different* tie positions, so that you don't need a large and confusing inventory of plates in many lengths.

Note how each plate is equipped with a big, sturdy forged hook that curves up over the frog base. It's a simple matter to get a good, snug, safe fit. Moreover, these integral hooks are larger and stronger than spike heads; they're made to withstand even the most vicious side-thrust and lifting.

Twin Hook Frog Plates are stocked in three standard lengths—23, 27, and 31 in. A number of different thicknesses are available. Ask for Folder 390, which describes the plates in detail and recommends quantities and lengths for various types of frogs.

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BETHLEHEM, PA.

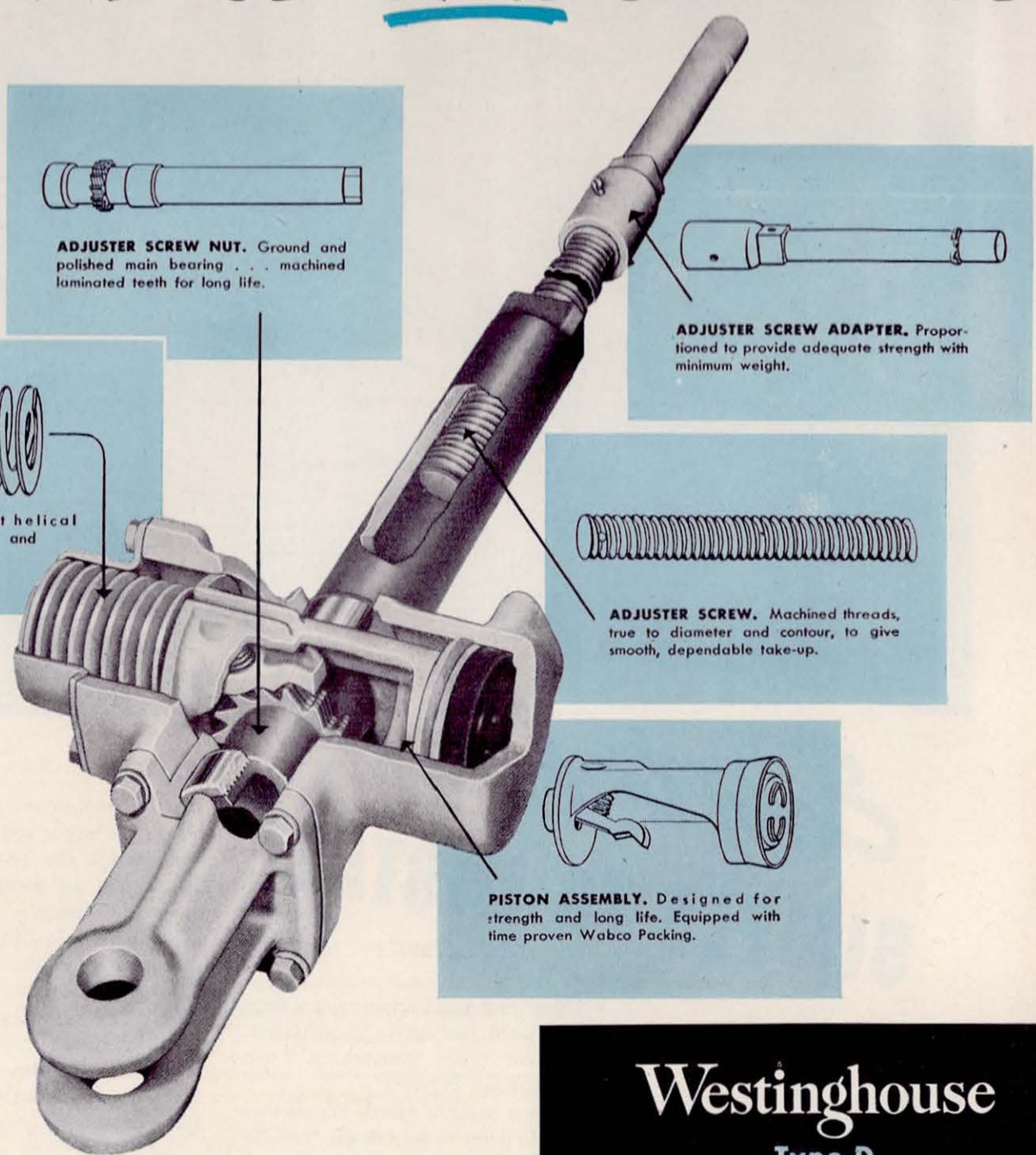
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM TWIN HOOK FROG PLATES

Here are the Reasons the Type "D"

DOES THE JOB—STAYS ON THE JOB



ADJUSTER SCREW NUT. Ground and polished main bearing . . . machined laminated teeth for long life.

ADJUSTER SCREW ADAPTER. Proportioned to provide adequate strength with minimum weight.

PISTON SPRING. Flat helical spring retains resilience and resists fatigue.

ADJUSTER SCREW. Machined threads, true to diameter and contour, to give smooth, dependable take-up.

PISTON ASSEMBLY. Designed for strength and long life. Equipped with time proven Wabco Packing.

Each of the simple, rugged operating parts in the Westinghouse Type "D" Slack Adjuster is designed to stand up under long, punishing service. The type "D" has the same fine engineering you find in Westinghouse Air Brakes . . . the same basic design principle that has been proved in many years of passenger service.

Westinghouse
Type D
Pneumatic-Automatic
SLACK ADJUSTER
for Freight Cars

Westinghouse Air Brake Co.

AIR BRAKE DIVISION
WILMERDING, PA.

Brakes are Basic to Railroad Progress

Vol. 132, No. 11 March 17, 1952

RAILWAY AGE

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With "UNION" Switch Stands You Can CHECK ALL 10!

- ✓ 1. Safety
- ✓ 2. Ease of throwing
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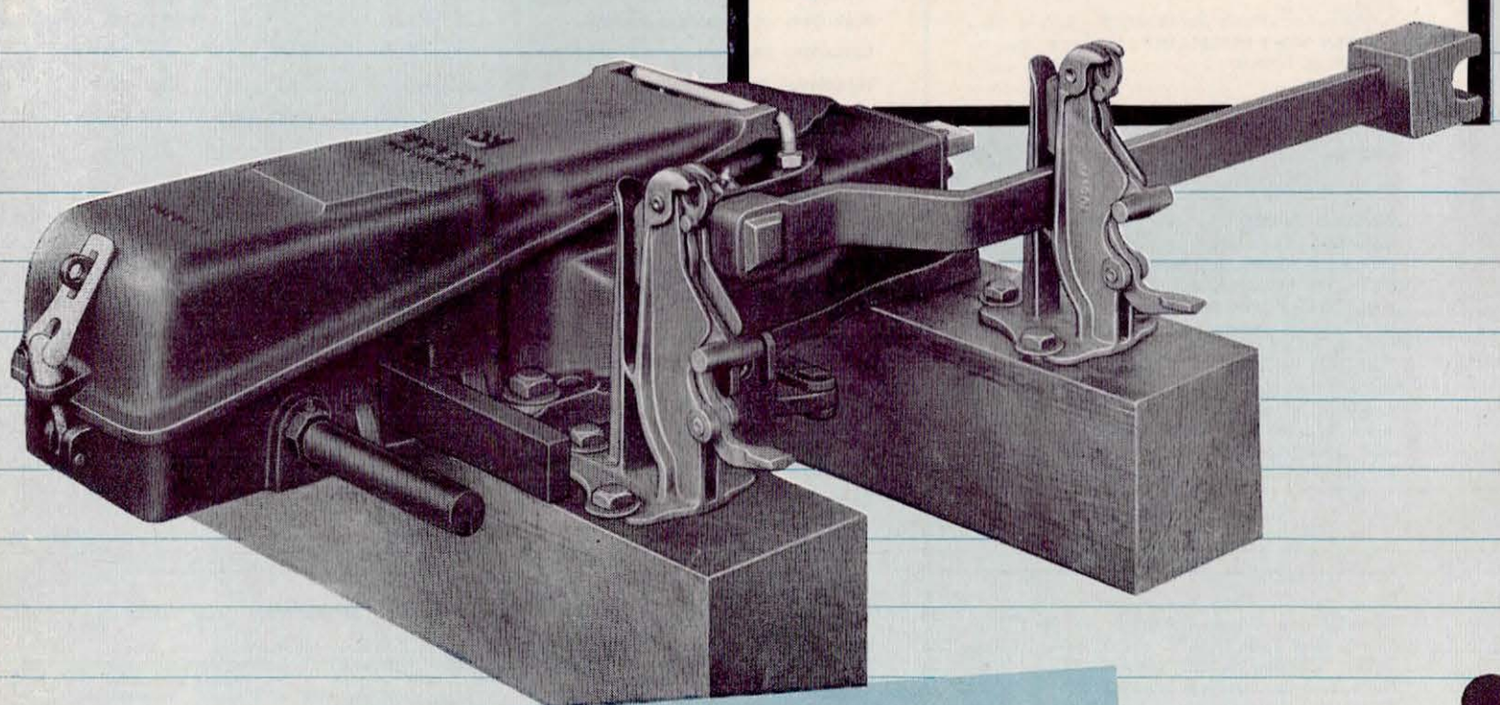

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NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, one month	
1952	$867,034,111
1951	848,728,726
Operating expenses, one month	
1952	$685,369,358
1951	644,416,929
Taxes, one month	
1952	$100,806,300
1951	109,020,627
Net railway operating income, one month	
1952	$ 66,066,877
1951	78,914,504
Net income, estimated, one month	
1952	$ 42,000,000
1951	57,000,000
Average price railroad stocks	
March 11, 1952	58.39
March 13, 1951	55.20
Car loadings, revenue freight	
Nine weeks, 1952	6,469,650
Nine weeks, 1951	6,494,995
Average daily freight car surplus	
Week ended March 8, 1952	8,083
Week ended March 10, 1951	1,176
Average daily freight car shortage	
Week ended March 8, 1952	2,837
Week ended March 10, 1951	36,832
Freight cars delivered	
February 1952	7,358
February 1951	5,842
Freight cars on order	
March 1, 1952	118,900
March 1, 1951	154,861
Freight cars held for repairs	
February 1, 1952	91,689
February 1, 1951	90,045
Net ton-miles per serviceable car per day	
December 1951 (preliminary)	939
December 1950	988
Average number railroad employees	
Mid-January 1952	1,221,846
Mid-January 1951	1,254,110

In This Issue . . .

FOUR COMPLETE SETS of new equipment—64 cars as fine as anything ever designed for daytime travel—go into service today—March 17 — on the New York-Washington "Congressionals" of the Pennsylvania, and the Boston-Washington "Senators," operated jointly by the P.R.R. and the New Haven. The Budd-built cars are fully described, with numerous illustrations and complete floor plans, in two feature articles immediately following frontispiece page 75.

THE FIFTY-FIRST ANNUAL MEETING of the American Railway Engineering Association, held at Chicago last week, is the subject of a full and well illustrated report, which is broken up into several articles. The first begins on page 92.

"BENCH MARKS AND YARDSTICKS" SERIES—As explained on our editorial pages last week, a series of articles under this heading begins in this issue—page 91. Contributions from readers will be the best possible source of practical and stimulating ideas for this series, and they are earnestly solicited.

A LARGE MEAT PACKING FIRM is about to place 25 mechanically refrigerated freight cars in a carefully recorded test of performance and cost. See news pages.

ANOTHER STRIKE—as was to have been expected! And they will keep on coming—until a few strikers lose their jobs and seniority, after which the railroads will be as free from industrial strife again as they always were when striking was risky. Details of the three-day work stoppage on the New York Central's Lines West of Buffalo and on the Terminal Railroad Association of St. Louis, which affected many other lines as well, are included in a news account beginning on page 11.

In Washington . . .

A LITTLE HIGHER PRODUCTION of new freight cars and locomotives may be achieved in this year's second quarter under increased material allocations just announced by the Defense Production Administration. As reported in more detail in the news pages, the revised allocations would permit second-quarter production of 21,000 cars instead of 18,000, and

WEEK AT A GLANCE

of 800 locomotives instead of 700, with a few more of each if material inventories can be stretched to cover them. Meantime, the joint monthly report of the A.A.R. and A.R.C.I. puts February freight-car production at 7,358 units, up from February of last year, but down from January of this year.

PROMPT RAILROAD RATE INCREASES to meet increases in costs are "absolutely necessary if the railroads are to continue to function as a sound and healthy part of our national economy," P.R.R. President Walter S. Franklin told a Senate committee in the course of last week's hearings on some of the many transport bills now pending in Congress. Support for his contention came in the report of January earnings, which showed lower net, as compared with January 1951, because costs again went up farther and faster than revenues. Both the hearings and the earnings figures are covered in the news columns.

. . . And Elsewhere

ONE RAILROAD MAN with a sharp pencil tells us that zeal in getting authority for accelerated amortization may often be profitably tempered with careful reckoning of what probably continued high taxes will take away when the tax base is lowered by speed-up in write-offs.

THE CAREER OF WAYNE A. JOHNSTON—from boyhood on a central Illinois farm to his presidency of the Illinois Central—was detailed by the Chicago Tribune in February in one of its series of feature articles, "How Men at the Top Won Their Place." Among Mr. Johnston's quoted remarks: "The day of being afraid of your boss is past. If your junior men are afraid to stand up and be counted, you're not getting the best out of them."

WALTER A. RENTSCHLER, vice-president of the Baldwin-Lima-Hamilton Corporation, has been appointed vice-president in charge of that company's Eddystone division. As reported on page 79 of last week's Railway Age, *Mr. Rentschler, previously in charge of the corporation's Lima-Hamilton division, will continue in general charge of its Hamilton plant.*

KENNETH L. VORE, director of the Military Traffic Service in the office of the Secretary of Defense, has been honored by the Washington, D. C., Junior Chamber of Commerce as "one of the four outstanding young government men of the year," for "meritorious and outstanding accomplishment" in "increasing cooperation among the military departments in loading, shipping, transporting and forwarding military freight and passengers."

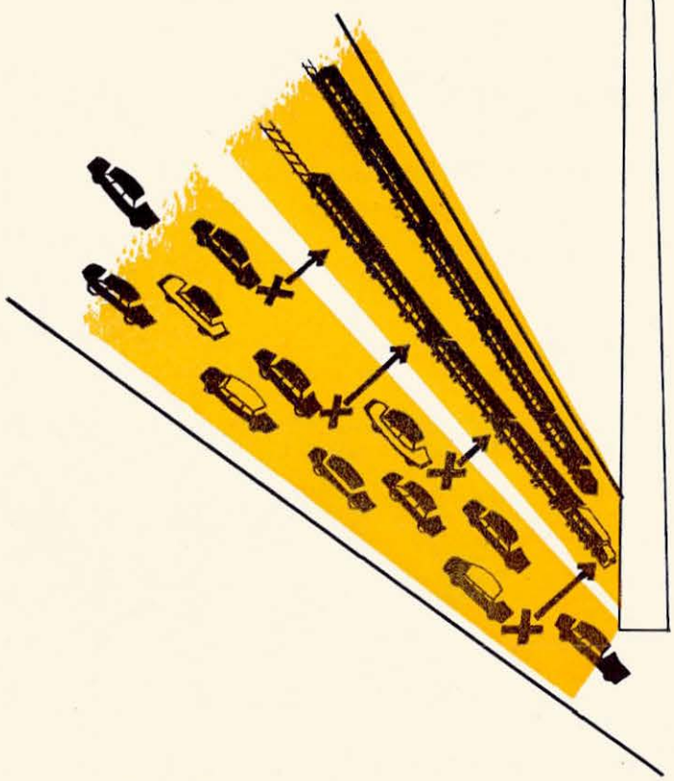
WHY AIR FREIGHT IS BECOMING BIG BUSINESS (*Railway Age*, February 4, page 8) is at least partially explained in this statement by a Los Angeles businessman, quoted in the magazine Sales Management: "The cost of an air freight shipment to New York of a $400 gasoline motor chain-saw is $8, or about twice the rail freight charge, but because a distributor can count on two- or three-day delivery by air freight, he doesn't have to place his order until he gets a firm commitment from a buyer. Thus he can collect from the buyer in time to pay us and take advantage of the 1 per cent discount which we extend for 10-day payment of bills; that discount makes his net cost the same as if he got the saw by rail. In addition, he is letting us carry an inventory which he normally would have to shoulder." This, says Sales Management, helps to explain why "sub-marginal land adjoining many of our big airports is now blossoming with new factories making products which can be shipped advantageously by air. Only a minority are the kind of light-weight, high-value items associated with air shipment."

millions

are making the switch

from "Over the Road" Driving to the Railroads Through the HERTZ Rail-Auto Travel Plan

it will pay your road to help speed up this switch!



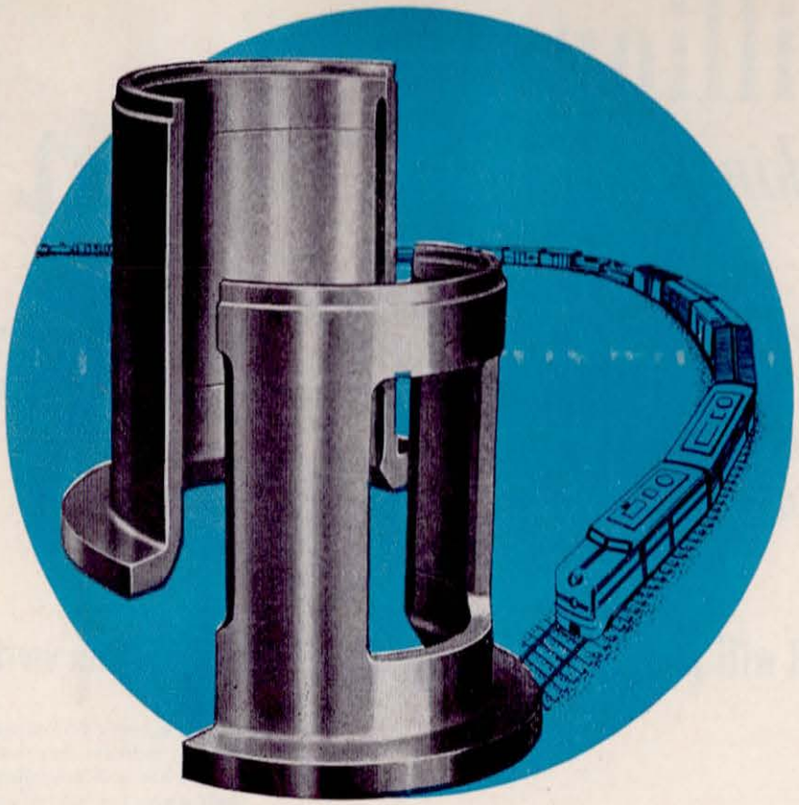
Recent surveys and constant checking of "out-of-town" rentals, indicate that thousands and thousands of people are now traveling by train who formerly drove their own cars long distances merely to have a car to drive at their destinations. They have switched to rail travel, and these surveys indicate that these Rail-Auto passengers traveled over 500 million miles on the railroads in 1951!

If your railroad is not joining with the other leading lines in co-operating with the Hertz Rail-Auto Travel Plan, you are failing to help hasten the switch that can return vast lost revenue back to the railroads. Hertz' continuous advertising in 2 and 4-color pages in Life, Saturday Evening Post, Collier's, Holiday, National Geographic, Time, Newsweek, U. S. News & World Report and other publications . . . many thousands of Hertz Rail-Auto folders distributed yearly . . . constant promotion of the plan by the railroads in their own advertising . . . timetables . . . literature . . . these are steadily producing startling results.

But remember, this private auto long distance travel is estimated at 500 *billion* passenger miles yearly! Your railroad too, should be persuading its share of this amazing potential to use trains and get their cars at destination through the Hertz Rail-Auto Travel Plan. Hertz, world's largest car rental organization, with more than 700 stations in more than 500 cities throughout the United States, Canada, Great Britain, Mexico, Hawaii and Alaska, created the Hertz Rail-Auto Travel Plan to provide travelers with new cars, at low rates and with gas, oil and insurance furnished when they arrive at their destinations. Great numbers of people, particularly vacationists and business people, now are using the Rail-Auto Plan regularly. For complete details, write Hertz Driv-Ur-Self System, Inc., Dept. D32. 218 South Wabash Avenue, Chicago 4, Illinois.

Rail Credit Cards—are honored at all Hertz stations. They serve as identification, eliminate deposit requirements, and provide credit privileges if desired.

HERTZ *Driv-Ur-Self* **SYSTEM**



PROOF of this Bearing is in the Lining!

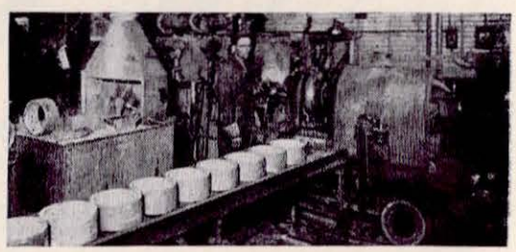
N-B-M Axle Bearings . . . with linings of centrifugally cast Silver Babbitt . . . give longer, lower cost service.

Here's a unique bearing lining that helps solve some old axle bearing problems . . . *a lining of centrifugally-cast #397 Silver Babbitt.*

Long-wearing N-B-M Silver Babbitt has all the needed physical properties for better service. It stands up under pounding and high torque loading . . . embeds grit . . . conforms to the axle . . . has exceptionally high resistance to corrosion.

To top it off, this Silver Babbitt is centrifugally-cast in the bronze back. The result is a stronger bond that is *consistently strong.* Gas holes are eliminated. And equally important, centrifugal-casting of the lining results in a uni-directional grain structure that helps roll up new performance records.

From thorough engineering research to specially developed N-B-M machines, nothing has been spared in building these bearings for economical and dependable operation. That's why you'll find more and more Diesel locomotive builders specifying N-B-M—for original equipment and replacement.



This N-B-M developed machine takes the guesswork out of centrifugal casting!

It's fully automatic—eliminates any human error. Thermostats insure exact metal temperatures. Timers control pouring and quenching. *The result is maximum uniformity . . . consistent high quality.*

AMERICAN Brake Shoe COMPANY

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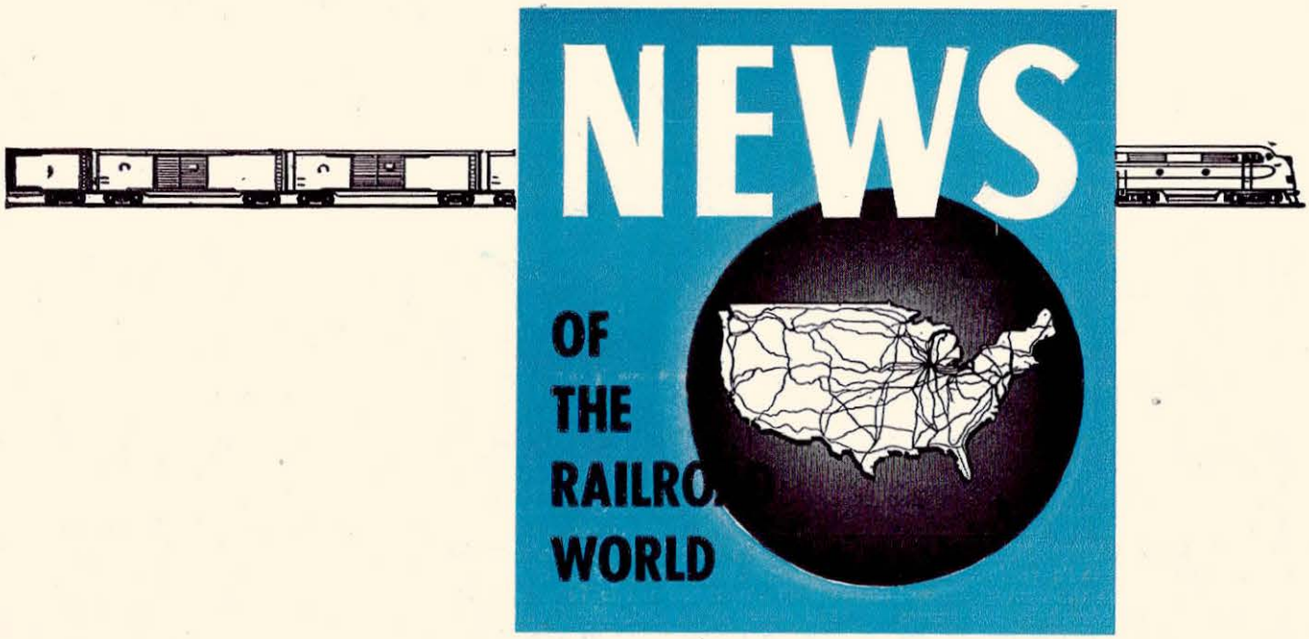


Injunction Halts Three-Day Strike On New York Central and T.R.R.A.

Central spokesman says walkout caused worst paralysis in road's history; hearing on request for permanent injunction set for March 19

The surprise strike of members of three railroad brotherhoods which began on March 9 and had tied up operations of the New York Central west of Buffalo and of the Terminal Railroad Association of St. Louis, and had affected other railroads in the midwest, was called off suddenly on March 11. Announcement by the heads of the three unions—the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen & Enginemen and the Order of Railway Conductors—that the strikers had been ordered back to work came a few hours after Judge Emerich B. Freed of the U. S. District Court in Cleveland had granted a federal government request for a temporary injunction against the strike.

Injunction Requested

The injunction was requested by the Army, acting through the Department of Justice, and was supported by affidavits from Charles E. Wilson, Director of Defense Mobilization; Major Gen. Frank A. Heileman, Army Chief of Transportation; Major Gen. C. D. Eddleman, deputy assistant chief of staff, G-3, Operations, Department of the Army; Eugene C. Thompson, executive secretary of the National Mediation Board; Postmaster General J. M. Donaldson; Homer C. King, acting administrator, Defense Transport Administration; John D. Small, chairman of the munitions board, Department of Defense; and Karl R. Bendetsen, assistant secretary of the army (general management). All affidavits emphatically pointed out that any interference with railroad transportation seriously jeopardizes national security.

A joint statement issued on March 9 by D. B. Robertson, international president of the B. of L.F. & E.; J. P. Shields, grand chief engineer of the B. of L.E.; and R. O. Hughes, president of the O.R.C., said, in part:

"We have exhausted every possibility of negotiation in our efforts to obtain a fair and honorable settlement. When it appeared that negotiations and mediation had failed, we made a joint offer to arbitrate the entire controversy. The railroads refused to arbitrate.

"That was six months ago.

"Nevertheless, the employees, in consideration of public interest and at a great sacrifice to themselves, because they have received no negotiated increase since 1948, resumed their painstaking efforts to reach a negotiated settlement.

"Sheltered by the legal fiction of government controls, the railroads adamantly refused to grant wages and working conditions to these employees on the same basis already granted to more than a million of the rail workers.

"The railroads also insisted and still demand that these employees not only forego equal treatment, but that they also accept changes in working conditions which have been in existence more than 50 years and the loss of which could cost the men as much or more than the wage increases offered by the railroads. . . .

"The administration, satisfied that its seizure order had hamstrung the employees, took no further constructive interest in the case. In cold disregard of the welfare of the workers, the administration failed to make available any effective procedure to settle the dispute.

"Instead it actually made itself a party to the controversy by injecting two new proposals into the dispute. One of them was that the employees bow to the railroads' repressive demands and then accept a moratorium on changes in wages and working conditions which would bar the door against the men making any counter requests for three years.

"As bait for the crippling moratorium, the administration proposed a wage escalator geared to the cost of living.

"Having made itself a party to the controversy by first proposing those conditions, then insisting upon acceptance, the administration later offered itself as an arbitrator to the dispute in which it already was undertaking to dictate terms. . . .

"Naturally, the men recoiled from the administration's effrontery.

"Left helpless by the partisan position taken by the government, and the obvious willingness of the railroads to sacrifice employee morale, the employees, after more than two years of fruitless negotiation, are forced to strike."

Effects of Strike

Most New York Central trains leaving New York for points west of Detroit were dropped during the strike. Because Canadian crews, unaffected by the strike, operate trains from Buffalo to Detroit, the Detroit half of the "Empire State Express" could reach its destination. The "Wolverine," which normally runs between New York and

Acme

NICKEL PLATE PASSENGERS traveled by bus from the road's yards on Chicago's south side to the central "Loop" district when, on March 9, rail access to La Salle Street station was cut off by the strike against the New York Central. This same scene was repeated many times outside of St. Louis as the three operating brotherhoods effectively tied up operations of the Terminal Railroad Association. Only the Illinois Terminal, which maintains its own passenger terminal in St. Louis, continued to offer uninterrupted passenger service.

Chicago, went to Detroit instead. Men in road and yard service had been instructed by the unions to move finished war materials, troop trains, hospital trains, and milk trains, but to give no special consideration to mail trains.

Spokesmen for the Central said the walkout had caused the worst paralysis in the road's history, and cost the company about $1 million a day. By the time the strike ended the road had furloughed about 30,000 of its employees, most of them at points west of Buffalo. The first crews back to work began moving thousands of tons of perishables which had been stranded in sidings and terminals. Normal schedules from St. Louis to New York became effective on March 12, as did eastbound operations from Chicago. Westbound service from Grand Central Terminal, New York, was restored with departure of the "Advance Empire State" to Buffalo and Toronto at 8:10 a.m. on March 12.

No Inkling

Officers of the T.R.R.A. had little or no inkling of the strike until 6 a.m. March 9 when they were notified by the B. of L. E. that its members would be "out" at 8 a.m. At 6:30 a.m., similar word was received from the B. of L. F. & E.

Because every passenger-carrying railroad serving St. Louis (except the Illinois Terminal) uses T.R.R.A. trackage for access to Union Station, passenger trains of most roads were halted in nearby towns and passengers transferred to downtown St. Louis by chartered buses. Passenger trains of the I.T. continued to operate normally in and out of the road's own terminal.

Freight-wise, the T.R.R.A.'s daily capacity of 14,000-odd cars, almost 85 per cent of the city's total, was lost and the tieup of this major east-west gateway began to have effects elsewhere almost immediately. The Alton & Southern, which was not affected, normally accounts for about 15 per cent of cars handled in the St. Louis switching district. The company was reported swamped with requests for service by the morning of March 10.

Other Roads Affected

Passenger trains of eastern roads other than the N.Y.C. were ending their runs at points in Madison county, Ill., on the east bank of the Mississippi. The Wabash cut back passenger service from Chicago to Decatur, Ill.; the Illinois Central cut night train service back to Springfield with bus service beyond. The G.M.&O. was operating into the St. Louis terminal using supervisory employees as conditions permitted.

The tieup of the N.Y.C. had some unexpected side affects on other roads. The Grand Trunk Western, because it shares several miles of Central trackage in South Bend, Ind., was forced to cancel both freight and passenger service in and out of Chicago. The Nickel Plate, which enters Chicago on trackage of the N.Y.C., was forced to transfer passengers to chartered buses at its freight and engine terminal on Chicago's far south side.

Airlines experienced a sudden increase in space and ticket requests but were not able to accommodate much of the diverted passenger traffic until March 11 because bad weather kept planes on the ground. Interstate buses did a brisk business and many city transit, sightseeing and intercity coaches were pressed into service to provide connections with trains at temporary terminals — especially at St. Louis.

The Pere Marquette district of the Chesapeake & Ohio placed embargoes in effect for several points where operations were tied up by N.Y.C. trackage. Although some subsidiaries of the N.Y.C. were tied up, notably the Michigan Central, the Big Four, the Peoria & Eastern and the so-called Kankakee Belt route, the Indiana Harbor Belt was not affected.

A.A.R. Statement

William T. Faricy, president of the Association of American Railroads, in a March 10 statement over the network of the National Broadcasting Company said:

"The railroads have made satisfactory settlements with approximately 90 per cent of their employees. Such settlements have been reached with 19 unions, including the two unions which represent more than half the men engaged in operating trains. The railroads are ready and willing—and have been ready and willing all along—to extend to these three [striking] unions, representing less than half of the men engaged in train, engine and yard service, the same settlement already accepted and in effect as to the majority. They stand ready to make wage adjustments back to October 1, 1950, so that these men can be assured of the same fair treatment their fellow employees have already received.

"It should be borne in mind that on December 21, 1950, the leaders of these same three unions signed a written agreement with the railroads for such a settlement. But before the agreement could be put into effect, it was repudiated by these unions and the dispute has continued ever since. . . . For the past 18 months the railroads have been operated under the direction of the Department of the Army. No doubt that department will take such steps as it thinks proper to protect the national interest and the national defense effort from interruption in railroad transportation. Speaking for the railroads, I express the hope that it may continue to be said of us—as it was truly said during World War II—that nowhere in all the world was the military might of America lessened or the striking power of its armed forces diminished by reason of any failure of rail transportation here at home."

March 19 was set by Judge Freed for a hearing on the government's request for a permanent injunction against the strike. When issuing the temporary injunction he said:

"The railroads are a part of our lifeline. The emergency is so great, and the crisis so apparent, that this court must issue a temporary restraining order. Refusal to issue such an order would endanger national security and cause irreparable injury to the United States."

Operations Resumed

Operations of the Terminal Association of St. Louis were "100 per cent normal" on March 13 after a full complement of engine crews had reported for work on the first trick 24 hours before. President Armstrong Chinn told *Railway Age* that the tieup of the terminal was almost 100 per cent effective as pickets were posted at points where trunk lines entered terminal trackage. Trunk line engine crews would not cross these picket lines.

Pickets were also posted at all points where T.R.R.A. employees entered the property for work. Terminal trainmen and yardmasters refused to cross these lines.

Operations of the New York Central in the midwest were not resumed quite so smoothly. Strikers failed to return to work at Toledo, Ohio, and at Elkhart, Ind., after their brethren had returned to work at most other points on the system. In addition, there was "sickness" at Englewood yard (Chicago) and on the affiliated Chicago Junction and Chicago River & Indiana. Only three out of 17 crews on the C.J. reported for work on the second trick on March 12 and it was necessary to embargo all traffic except livestock. Later that evening, workers at Elkhart voted to return to work and it was expected that shortly after *Railway Age* press time all "holdouts" would be back on the job and operations restored to normal. Toledo workers had voted to return to their jobs earlier.

Procedures to Expedite Rate Increases "Absolutely Necessary," Franklin Says

Enactment of legislation to provide for prompt railroad rate increases as costs rise, and to rewrite the Interstate Commerce Act's rule of rate-making, "is absolutely necessary if the railroads are to continue to function as a sound and healthy part of our national economy," according to Walter S. Franklin, President of the Pennsylvania.

Mr. Franklin's statement in support of such legislation was made to the Senate Committee on Interstate and Foreign Commerce, which is now holding hearings on bills introduced in the Senate as a result of the committee's studies of domestic land and water transportation. Specifically, the P.R.R. president urged enactment of S.2518, the rate-increase expediter, and S.2519, which embodies the proposed rewriting of the rule of rate-making. (*Railway Age* of February 4, page 14.)

At other hearing sessions (subsequent to those reported in last week's issue, page 14), the committee received presentations from the Interstate Commerce Commission, and Joseph G. Kerr, chairman of the Southern Freight Association. The commission's presentation involved only brief statements covering some of the legislative recommendations of its annual report (*Railway Age* of February 11, page 12). It is expected to submit later its comments on other bills involved in the hearings. Mr. Kerr advocated repeal of the long-and-short-haul clause of the Interstate Commerce Act's section 4.

S.2518 would add to the act a new section 15b, which would permit railroads to increase rates upon certification to the commission that the increases were necessary to meet increased costs, to maintain credit, and to "take advantage of technological developments. . ." In rewriting the rule of rate-making in section 15a, S.2519 would eliminate the language which makes the "effect of rates on the movement of traffic" a matter to be considered by the commission. S. 2518 also has provisions for investigation of the new rates by the commission, which would have authority to require modifications.

"The problem to which these bills are directed is the inadequacy of net earnings," Mr. Franklin said. Later on in his statements, he said that the commission's action in rate cases had been "aptly" characterized as "too little and too late." S.2518, he added, is directed "to what may be called the 'too late' reason for our difficulties," while S.2519 is directed to the "'too little' phase of the railroads' problem."

Mr. Franklin described in detail the general rate proceedings of the postwar period, noting particularly the time the commission took to decide, and the amount by which the authorized increases fell short of meeting rises in railroad costs. In all of the cases except Ex Parte 162 he said, "costs rose so rapidly that it was necessary to amend the petitions between the dates of original filing and final decision.

As to the commission's expressed concern that the railroad rate proposals would cause such losses in traffic as to "defeat their objective," Mr. Franklin suggested that railroad traffic officers "are more anxious not to lose business than the Commission could possibly be." He also suggested that the question of what rates will move or lose traffic "is properly not a question for commission determination because it has no means of determining it on a practical basis."

In further comment on S.2518, the P.R.R. president said that the legislation there proposed would not destroy the commission's power over rate increases—it would "merely postpone the exercise of this power by the commission until after the railroads have had an opportunity to put the rates into effect."

Rate-Cost Balance

"The commission," Mr. Franklin added, "has developed an attitude and a psychology which fails to recognize the importance of prompt and proper timing—which fails to recognize the necessity for synchronizing cost increases and revenue increases. It exercises its authority to grant advance approval of rates with the slowness and deliberation appropriate to a retrospective review of past rates, and when it finally acts, the passage of time has already made the new rates obsolete before they go into effect."

The I.C.C. presentation on its legislative recommendations included a statement by Commissioner Patterson in support of pending bills to give the commission authority to require the installation of radio and other train-

PROGRESS IN INSTALLATION OF TRAIN COMMUNICATION SYSTEMS BY THE RAILROADS

JANUARY 1, 1949 to JANUARY 1, 1952

Line-of-road Installations

Year	Number of Railroads	Number of Installations	Miles of Road*	Number of Units Equipped**
Jan. 1, 1949	22	38	17,159	1,241
Jan. 1, 1950	32	59	19,328	1,583
Jan. 1, 1951	37	77	25,734	2,087
Jan. 1, 1952	48	95	40,796	4,082
Increase 1949 to 1952	26	57	23,637	2,841

Yard and Terminal Installations

Year	Number of Railroads	Number of Installations	Number of units equipped**
Jan. 1, 1949	41	84	682
Jan. 1, 1950	50	111	867
Jan. 1, 1951	57	143	1,127
Jan. 1, 1952	63	178	1,501
Increase 1949 to 1952	22	94	819

* Miles of road over which units equipped with train communication systems operate.

** Includes wayside stations, engines, cabooses and other cars equipped with radio, inductive systems, wire intercommunication systems, and portable pack sets used in yards and terminals.

Summary of Line-of-road and Yard and Terminal

Year	Number of Railroads	Number of Installations
Jan. 1, 1949	46	122
Jan. 1, 1950	61	170
Jan. 1, 1951	70	220
Jan. 1, 1952	87	241
Increase 1949 to 1952	41	119

NOTE: This tabulation was included in a presentation which Interstate Commerce Commissioner William J. Patterson made last week to the Senate Interstate and Foreign Commerce Committee in support of proposed legislation to give the commission authority to require railroads to install radio and other train-communication facilities.

communication facilities; and a statement by Commissioner Alldredge in support of the proposal to make section 22 agreements firm commitments, i.e., to preclude filing by the government of complaints assailing such rates as unreasonable.

Brief statements in support of other commission recommendations were made by Chairman Rogers and Commissioner Mahaffie, while the presentation was directed by Commissioner Splawn, who is chairman of the commission's legislative committee.

In urging repeal of the long-and-short-haul clause, Chairman Kerr of the Southern Freight Association emphasized that he favored such action rather than legislation which would apply the clause to motor carriers.

"I cannot conscientiously defend the placing of what I consider a bad law upon our motor carrier competitors simply because the railroads are afflicted with it," Mr. Kerr said. "The proper course of action would be to remove it from the backs of the railroads."

January's Net Income Estimated at $42 Million

Class I railroads in January had an estimated net income, after interest and rentals, of $42,000,000, compared with $57,000,000 in the corresponding month last year, according to the Bureau of Railway Economics of the Association of American Railroads.

January's net railway operating income, before interest and rentals, was $66,066,877, compared with $78,914,504 in January, 1951.

In the 12 months ended with January, the rate of return averaged 3.66 per cent, compared with 4.26 per cent for the 12 months ended with January, 1951.

Gross in January amounted to $867,034,111 compared with $848,728,726 in the same month of 1951, an increase of 2.2 per cent. Operating expenses amounted to $685,369 compared with $644,416,929, an increase of 6.4 per cent.

Twenty-five Class I roads failed to earn interest and rentals in January, 1952, of which 12 were in the Eastern district, one in the Southern region and 12 in the Western district.

Class I roads in the Eastern district in January had an estimated net income of $16,000,000 compared with $20,000,000 in the same month of 1951. Those same roads in January had a net railway operating income of $30,344,158 compared with $32,479,122.

Gross in the Eastern district in January totaled $394,909,810, an increase of 3.4 per cent compared with the same month of 1951, while operating expenses totaled $319,178,849, an increase of 6.6 per cent.

Class I roads in the Southern region in January, had an estimated net income of $12,000,000 compared with $12,000,000 in the same month of 1951. Those same roads in January had a net railway operating income of $14,294,229 compared with $13,736,217.

Gross in the Southern region in January totaled $129,906,761, an increase of 4.1 per cent above January, 1951, while operating expenses totaled $95,592,984 an increase of 4.1 per cent.

Class I roads in the Western district in January had an estimated net income of $14,000,000 compared with $25,000,000 in the same month of 1951.

Those same roads in January had a net railway operating income of $21,428,490 compared with $32,699,165.

Gross in the Western district in January totaled $342,217,540, a decrease of 0.3 per cent below January, 1951, while operating expenses totaled $270,597,525 an increase of 6.9 per cent.

CLASS I RAILROADS—UNITED STATES
Month of January

	1952	1951
Total operating revenues	$867,034,111	$848,728,726
Total operating expenses	685,369,358	644,416,929
Operating ratio—percent	79.05	75.93
Taxes	100,806,300	109,020,627
Net railway operating income (Before charges)	66,066,877	78,914,504
Net income, after charges (estimated)	42,000,000	57,000,000

Mechanical "Reefers" Specified by Meat Packer

Under arrangements just completed between John Morrell & Co., Iowa meat packing firm, the Mather Stock Car Company and the Thermo King Railway Corporation of Minneapolis, meat from the packer's Ottumwa plant will move to Florida points in mechanically refrigerated cars, beginning this spring. A total of 25 cars, newly built and leased from Mather, will be equipped with Thermo King units for this service.

The mechanical equipment is completely automatic. An desired temperature can be maintained by setting a dial.

The Morrell firm, said to be the oldest and fifth largest of U.S. meat packers, is the first to adopt gasoline-powered units for refrigerating railroad meat cars. These units are basically similar to those which Thermo King makes for highway transport — and which Morrell already uses. The packing company expects that the new railway units — by providing more uniform temperatures — will bring meat to market in more perfect condition.

Thermo King reports that there are only 172 mechanically refrigerated railway cars in service in the United States at the present time. Most of these are being used to handle frozen foods.

Under the agreement, Morrell will pay for use of the cars on an elapsed-time basis, and all maintenance work on the refrigeration equipment will be done by Thermo King at Sioux Falls, S. D., where, according to Vice-President Ralph W. Porter, one man can easily handle required maintenance for units servicing the 25 cars.

For this new service, only one unit will be installed in each car, although all cars are being built to accommodate two units. (For a description of the two-unit system see *Railway Age*, December 23, 1950, page 26.) For certain types of return runs, Thermo King may elect to place two units in operation. In the event that some sort of mechanical failure occurs en route, regional Thermo King dealers will exchange units. Both the Morrell and Thermo King companies will keep a complete statistical account of the performance. Detailed findings as to cost of operation and efficiency of temperature control will thus become available.

Oil Lands May Bring N.P. "Substantial Benefits"

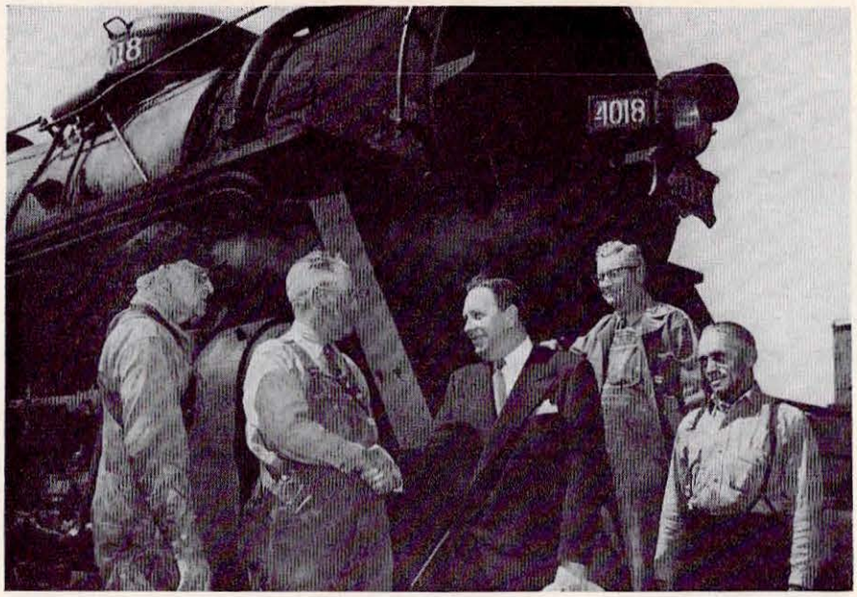
Land holdings and mineral reservations in the new Williston oil basin in Montana and North Dakota may add considerably to the Northern Pacific's income in the next few years. The company now owns or has mineral reservations that include oil and natural gas on 3,200,000 acres in the oil basin area.

N.P. President Robert S. Macfarlane told stockholders in the company's annual report, recently released, that competent oil men report discoveries in widely separated locations in the area that indicate an important new basin has been found. "If it should develop that any considerable part of the Williston basin contains oil in commercial quantities, it appears certain that the Northern Pacific will reap substantial benefits because of its ownership."

Mr. Macfarlane revealed that two of the new producing wells in Montana are on N.P.-reserved land and that a third is subject to a "unitization" agreement of which certain N.P. lands and reservations are a part. He added that an oil consulting firm has been employed by the railroad, and that a program for management of the company's potential oil properties would soon be "well under way."

Steam Power Bows Out On the Frisco

A dieselization program, begun only five years ago, was completed by the St. Louis-San Francisco on February 29 with the assignment of a new locomotive to a local freight run out of Birmingham, Ala., for the following day. In the five-year period, the Frisco has acquired a total of 407 diesel units



END OF ERA.—When St. Louis-San Francisco steam locomotive 4018 pulled into Birmingham, Ala., with a local freight train on February 29, it closed an era in which the steam locomotive was the accepted "living" symbol of railroading. The next day a new diesel took over the 4018's assignment, and the Frisco became the newest—and, it appears, the largest—all-diesel powered railroad in America. Here the crew on the 4018's last run is greeted by A. M. Ball, assistant to the president, upon their arrival in Birmingham. From left to right are: Engineman Rufus Smith, Conductor C. H. Stuteville, Mr. Ball, Brakeman R. S. Blackburn and Fireman Eli Wilson.

— enough to handle all freight, passenger and switching assignments. It also has established entirely new locomotive maintenance facilities at Springfield, Mo., as well as new servicing stations at other points along its 5,000-mile, nine-state system.

President Clark Hungerford, commenting on the passing of the steam locomotive, said that, while the shipping and traveling public can obtain more efficient service through diesel power," we must admit that it was the steam locomotive that supplied the power to span a virgin continent and furnished the only mass transportation medium that for years has helped to raise America's standard of living to what it is today."

He said that since inauguration of the Frisco's diesel program, there has been a marked improvement in operating efficiency. In 1947, the road's gross ton-mile-per-train-hour performance was 32,703. But in 1951 — with freight service 86 per cent dieselized — this figure rose to 41,644. At the same time, gross tons per train-mile rose from 1,670 to 2,346.

The Frisco's locomotive fleet now includes:

17	2,250-hp. passenger units;
6	2,000-hp. passenger units;
12	1,500-hp. freight and passenger units;
123	1,500-hp. freight units;
133	1,500-hp. general-purpose units;
11	1,000-hp. general-purpose units;
75	1,000-hp. switching units;
19	1,200-hp. switching units
2	660-hp. switching units; and
9	44-ton switching units.

"Simple Changes" Would Brighten RR Picture—Lyne

"With all the railroads' political and other handicaps, they are still producing freight transportation service at an average charge of only about one-third the costs incurred by their rivals on the public highways. The railroads' main function—that of hauling freight and a substantial percentage of passengers in large volume units at extremely low cost—has suffered no impairment. All that needs doing is to free this splendid economic machine from the political barnacles, cobwebs and rats' nests that have been allowed to clutter it up during the past 75 years and the chronic railway crisis will quickly become past history."

So James G. Lyne, editor of *Railway Age*, told the New England Railroad Club on March 11.

"The prevalence of socialistic practices in transportation," Mr. Lyne said, "is denying the railroads two or three billions in gross revenue which, if they had it, they could share generously with their patrons in lower rates and improved service and become themselves more prosperous than they have ever been before. The question of taking the steps necessary to halt this invasion of socialism into transportation is just as practical as any problem that confronts railroad people and the business community generally."

"The railroads," Mr. Lyne declared, "have not always made as clear as we should have" the fact that:

"We have no right to quarrel with the fellow who, within the law, operates a heavy truck combination on the highway or a tow of barges on an improved river. Our legitimate argument does not lie with the fellow who sees the government giving away money and who lines up to get his share. Instead our argument rests entirely with the government and its hand-out policy. . . .

"The distinction is an important one, and if we will always bear it in mind and make it clear, we shall avoid the accusation that we are trying to get political impediments put upon our competitors."

Mr. Lyne expressed doubt that the business community, the railway unions or even "the shippers and other users of socialized transportation" want to see the railroads socialized, but asserted that "the threat is becoming clearer every day," and continued to say:

"Since nobody believes that they can be permitted to shut up shop and go out of business, only two choices are left open—either (1) the taxpayers will soon have to be called upon to finance the railroads the way they do the airways, the highways, and the waterways or (2) the railroads' competitive surroundings and the severity of their regulation will have to be moderated enough to restore their earnings so that private investors will want to put money in the railroad business again.

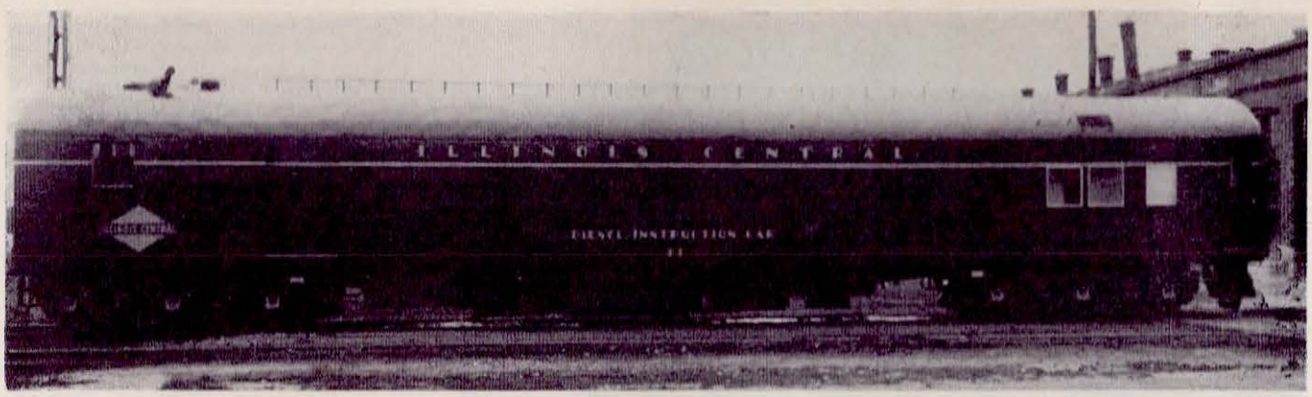
"We don't have to go to the American people and ask them to sacrifice their welfare for our benefit. We don't have to ask them to do a single thing which is not as much for their benefit as ours. Take this matter of adequate charges for the commercial use of the highways. We do not have to say, 'Kindly put some more charges on the heavy trucks and limit their weight so they can't take so much traffic away from us.'

"Quite the contrary, we do not have to ask that policy in highway finance give any thought whatever, even to the existence of the railways. If the state authorities will take the steps necessary to protect their highways from destruction by overloads, as recommended by highway engineers themselves—and for the benefit, not of the railroads, but of other highway users, I do not know of a railroad man who would ask anything more. Furthermore, I don't know of a railroad man anywhere who advocates fees for use of roads by heavy trucks at a rate any higher than that necessary to collect from

CAR SURPLUSES, SHORTAGES

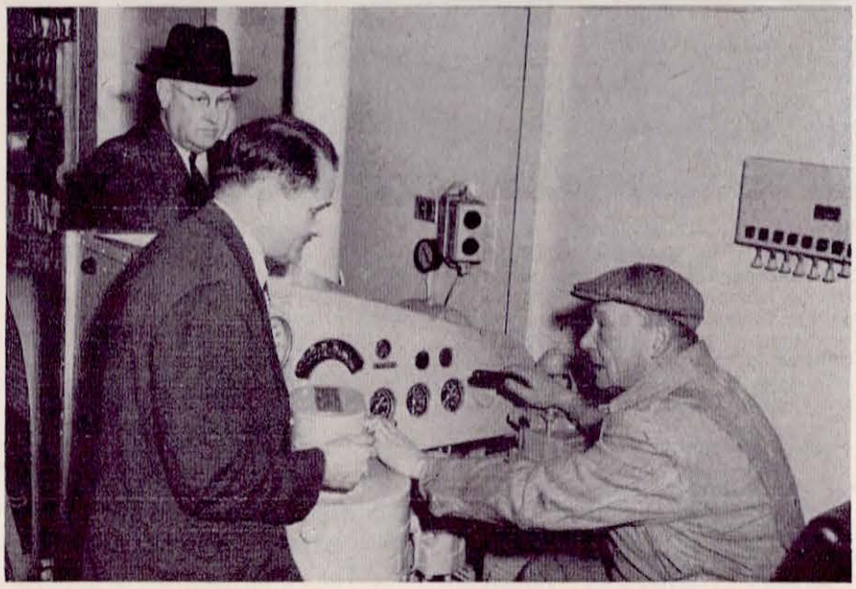
Average daily freight car surpluses and shortages for the week ended March 8 were announced by the Association of American Railroads on March 13 as follows:

	Surplus	Shortage
Plain Box	1,010	771
Auto Box	189	0
Total Box	1,199	771
Gondola	258	929
Hopper	1,438	217
Covered Hopper	259	0
Stock	2,399	0
Flat	186	616
Refrigerator	1,729	269
Other	615	35
Total	8,083	2,837



I.C. EXHIBITS DIESEL INSTRUCTION CAR

AS PART OF AN INTENSIFIED TRAINING PROGRAM, the Illinois Central has placed in service this new diesel training car (above) rebuilt from an old baggage car at the road's Burnside shops in Chicago. Following a brief exhibition in Chicago on March 5, the car was sent on a 6,500-mile tour of the system to conduct training courses wherever diesel operation exists. The car is equipped with a classroom seating 18. Training facilities include a blackboard, bulletin board, public address system and 16-mm. motion picture projection, maintenance and storage facilities. Storage space is also provided for instruction manuals and other training literature.



ACTUATED BY THIS THROTTLE (right) is a simulated "locomotive," made of old electric kitchen fan motors and flywheels, that has a "response" similar to that of a real locomotive. All electrical equipment in the car is "live" to teach trouble shooting. The instructor operates a panel of some 30 switches that duplicate conditions of wheel slipping, blown fuses, cut-out of ground relay, lack of fuel, etc., which a "student" must learn to trace. Here Engineman C. L. Hibbard tests reaction of controls and finds it similar to actual locomotive. Diesel Instructor Robert I. Fort (center) and General Superintendent of Equipment A. G. Kann look on. The car, which contains a private office with berths, is fully air conditioned and equipped with fluorescent lighting. Hinged covers over wiring channel will permit easy changing of circuits and replacing of demonstration equipment.

such users in proportion to their comparative ton-mile burden on the highways.

"There is no regulator of business practice so effective as competition. Where there is plenty of competition, there is no justification for regulation. . . . Why then is it necessary to regulate transportation so minutely when there are scores or even hundreds of carriers competing for almost every shipment—some few basic commodities, of course, excepted?

"I do not know of a railroad man anywhere who would object to regulation to the extent of requiring certificates of convenience and necessity for all common carriers—as long as there were no exemptions. Or who would object to being required to file and adhere to tariffs, or to having reasonable accounting rules and safety measures enforced, or who would object to being required to abstain from gross and arbitrary discrimination among patrons, or to avoid questionable financial practices. Why do we need any more regulation than this in such a highly competitive business as transportation now is?

"I believe it is possible and practicable for railroad men to set down a half-dozen simple but fundamental changes in the present way transportation is treated by government and to say truthfully and with conviction: 'Give us these few changes in the rules, not in our interest but in your own interest in the avoidance of further socialization of transportation, and our industry will enter upon a period of progress, prosperity, improvement in service and declining charges such as you have never before witnessed. Refuse to give us these changes and we will inevitably go the way your major urban transit systems have already gone.' The outlook, with such a presentation of the case, in forthright simplicity and honesty, ought not to be too dark."

Proposed St. Lawrence Bond Issue Called "Deceptive"

The proposal by a group of senators to finance the International Rapids section of the proposed St. Lawrence waterway by a bond issue is perhaps the most deceptive tactic yet used by proponents of the waterway, the National St. Lawrence Project Conference said in a recent statement. Under the proposal, it added, a government sponsored agency known as the St. Lawrence Development Corporation would be created. The government would buy $10,000,000 of the corporation's capital stock and it would be authorized to issue $485,000,000 of bonds, guaranteed by the government and carrying interest not to exceed three per cent. The bonds would mature in 50 years.

"This proposed roundabout way of financing the work in this section is intended to deceive the taxpayers," the statement continued. "Its sponsors argue that it would not promote inflation or increase the national deficit. The fact is that, insofar as the taxpayers or the state of federal finances are concerned, there is not the slightest difference between this method and a direct appropriation by Congress for the project."

Freight Car Loadings

Loadings of revenue freight in the week ended March 8 totaled 714,247 cars, the Association of American Railroads announced on March 13. This

was a decrease of 41,377 cars, or 5.5 per cent, compared with the previous week; a decrease of 35,275 cars, or 4.7 per cent, compared with the corresponding week last year; and an increase of 6,336 cars, or 0.9 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended March 1 totaled 755,624 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, March 1

District	1952	1951	1950
Eastern	135,766	145,236	106,975
Allegheny	161,597	167,223	108,922
Pocahontas	61,169	63,175	22,498
Southern	128,166	139,869	113,599
Northwestern	82,790	81,544	68,680
Central Western	123,991	123,634	98,787
Southwestern	62,145	65,180	54,988
Total Western Districts	268,926	270,358	222,455
Total All Roads	755,624	785,861	574,449
Commodities:			
Grain and grain products	53,039	52,334	42,072
Livestock	8,070	6,810	7,675
Coal	145,867	151,055	58,098
Coke	16,012	17,194	8,150
Forest products	44,165	47,872	38,948
Ore	21,647	22,059	8,855
Merchandise l.c.l	76,976	86,480	83,070
Mscellaneous	389,848	402,057	327,581
March 1	755,624	785,861	574,449
February 23	683,368	734,845	546,707
February 16	737,609	740,557	560,068
February 9	733,724	573,209	568,816
February 2	731,006	651,165	612,464
Cumulatve total 9 weeks	6,469,650	6,494,995	5,252,897

In Canada.—Car loadings for the eight-day period ended February 29 totaled 90,810 cars, compared with 71,618 cars for the previous seven-day period according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 29, 1952	90,810	44,843
Cumulative totals for Canada:		
February 29, 1952	649,000	314,888

University of Illinois to Test Diesel Wheels

A year-long research program which may result in improved distribution of metal in the wheels of diesel locomotives is being started at the University of Illinois this month. Sponsored by the Technical Board of the Wrought Steel Wheel Industry, it will be carried out under direction of Prof. Herman J. Schrader. More than 50 wheels will be tested.

I.C. Asks to Drop 50 Suburban Trains

The Illinois Central has filed a petition with the Illinois Commerce Commission seeking permission to discontinue 50 Sunday trains operated within electrified suburban territory in the Chicago metropolitan district. Present Sunday schedules have a total of 240 trains listed.

Basically, the plan is to increase the interval between trains from 15 to 30 minutes on the main line and the South Chicago branch and to reduce service on the Blue Island branch from half-hourly to hourly. The railroad explained to the commission that the move was occasioned by a "drastic drop" in the number of Sunday riders.

In the same petition, the I.C. proposed some additional week-day express service principally to serve a large new housing development near the end of the main-line route.

D.T.A. Outlines Its Role In Draft-Deferment Matters

The Defense Transport Administration has set forth the conditions under which it can assist in having indispensible personnel of the transportation, port facilities and warehousing industries deferred or delayed in reporting for active military duty.

This information is contained in a statement prepared by the D.T.A. Manpower Division for distribution through its various operating units. The statement emphasizes these points among others:

1. To qualify for such postponement in reporting ofr military service, an employee must not only be engaged in an essential activity, as defined by the U.S. Department of Commerce (this includes transportation and certain allied activities), but must also be engaged in a critical occupation within that acvtivity, as defined by the U.S. Department of Labor.

2. Delay and deferment—for reservists, national guardsmen or selective service inductees—means simpliy a postponement in reporting, and not an exemption from active service.

3. Normal means provided for handling such requests (that is, applications to local boards, appeal boards, State boards, etc.) must be exhausted before D.T.A. can support requests for delay or deferment of military service for personnel in the industries named.

These conditions having been met, the statement explains, D.T.A. may then lend its support to obtain the deferment or the delay. The statement also outlines the steps to be followed in making such a request.

I.C.C. Sets Back Hearing In Norfolk Southern Case

The Interstate Commerce Commission has set back, from March 24 until April 22, the date for the opening of public hearings in connection with its investigation of Norfolk Southern "practices." The commission acted in response to a petition filed by counsel for the respondent road and its officers and directors who are also respondents in the case.

The inquiry, instituted by the commission upon its own motion, is docketed as No. 30980. The public hearings will be held before Examiner O. L. Mohundro at Washington, D. C. (*Railway Age*, January 28, page 17.)

INAUGURATING ITS CENTENNIAL YEAR, the Western Maryland has presented special hundredth anniversary lapel emblems to all its employees—including the nine Rhodes brothers—all of whom are Western Maryland enginemen. Eugene S. Williams, president of the W.M., presented the pins to the nine brothers—left to right, Paul, Sterling, Preston, Donald, Robert, Richard, Burnell, Clinton and Dale—at the road's Port Covington (Baltimore) terminal. The black, red and gold emblem itself is based on the road's herald, shown on the diesel locomotive in the background, with "100th" in the center in place of the words "Fast Freight Line," with gold-tipped red wings to the right, and the word "anniversary" on a scroll below.

PENNSY IN ALL-OUT "RELATIONS" PROGRAM

The Pennsylvania has in preparation an employee magazine, as was noted in *Railway Age* of February 11. Also noted (issue of January 28) was the appointment of a "supervisor of community relations." Paralleling these steps, it was revealed in a recent address to P.R.R. veterans by Ralph C. Champlin, vice-president, public relations, that:

"We are conducting classes in supervisory development with the help of eleven universities and this program is being expanded to cover the entire railroad. We are instituting new and improved methods for hiring people and for selecting employees for promotion to supervisory positions. A man or woman's knowledge and understanding of human relations, both for the improvement of employee relations and for public relations, will be two of the important criteria used in selecting those best fitted for promotion.

"This new employee relations program is to my mind one of the most advanced and progressive in any business today."

Mr. Champlin went on to specify "four overpowering problems" facing the railroad industry, and the P.R.R., in particular, as:

1. "Horse and buggy" regulations
2. Shortage of investment capital, arising from poor earnings in comparison with the returns available to investors in other industries.
3. The subsidies to rival transportation agencies.
4. "Customer satisfaction and good will"—the place where alert employees can be of greatest help.

Mr. Champlin went on to explain that the first three questions had been dealt with definitively in recent addresses, respectively, by Executive Vice-President J. M. Symes; Vice-President (Finance) David Bevan; and Vice-President (Traffic) Fred Carpi. The fourth problem, he went on to say, was largely in the hands of the employees, who are doing a creditable job already and will be helped further by the instruction being made available to them in "the technique of gaining the understanding and good will of our customers." He explained that "the very essence of good public relations is sincerity . . . Only when actions are such that the public would approve them, if they knew about them, can the tools and media of communication help to create a favorable understanding by bringing these actions to the attention of more people."

In addressing the public, Mr. Champlin said further, it's what the public takes *off* of a piece of paper that counts—not what is put *on* the paper. "Right today some scarce railroad dollars are being spent to send out letters, booklets, movies and advertisements which are uninteresting or unintelligible to the minds of the people they are intended to influence," he added.

During World War II, he continued, "the railroads did a good job of getting understood." In the crowded trains of those days, people credited the railroads with doing the wonderful job they were doing, and blamed their discomfort on the war, as they should have. But since the war, lack of understanding has increased—and the railroads' explanation is a complex one, not easily told without statistics, which it is not possible to interpret in simple terms. And "railroad language," where a ticket is called "transportation," doesn't make the problem any easier. "I've been wondering," he said, "whether I can learn the railroad business and still keep that ignorance that helps me understand why most people don't know what most railroad men are talking about."

Certificates of Service Awarded to Businessmen

Certificates of service honoring 188 of the country's businessmen who have served without compensation to aid the government's defense efforts were presented by Secretary of Commerce Charles Sawyer in Washington, D. C., on March 12.

Among those so honored were Philip A. Hollar, of the American Car & Foundry Co.; Guy O. Beale, of the Chesapeake & Ohio; Harry P. Davison, of the American Locomotive Company; and Harry F. Kusick, of the Union Switch & Signal Division of Westinghouse Air Brake Company, all of whom received their certificates from the National Production Authority. Mr. Hollar received, in addition, a certificate from the Department of Commerce.

"The willingness of you gentlemen to come to Washington at personal sacrifice to give of your time, talent and energy to help your country increase its strength is a tribute to the patriotism of American business," Mr. Sawyer said.

Brand Heads Railway Mail Transportation Committee

Herbert B. Brand, manager of mail and express traffic of the Atlantic Coast Line, at Wilmington, N. C., has been appointed chairman of the Committee on Railway Mail Transportation.

In his new position, Mr. Brand will maintain headquarters in Union Station, Chicago, with a Washington, D. C., office at 1757 K street, N. W. His appointment to the committee chairmanship fills the position made vacant by the death of the former chairman, Peter J. Schardt, retired assistant vice-president of the Southern.

The Committee on Railway Mail Transportation is a standing committee which has been in existence since 1910; it is composed principally of executives representing Class I mail-carrying railroads, as well as many Class II railroads. The office of chairman has been a full-time position since 1947.

MORE NEWS ON PAGE 108

Additional general news appears on page 108, preceded by regular news departments, which begin on the following pages:

Organizations	108
Supply Trade	110
Equipment and Supplies	110
Construction	112
Financial	113
Railway Officers	114

"CONGRESSIONAL," "SENATOR" INAUGURALS

Actual service inaugurations of new equipment for the New York-Washington "Congressionals" and the New York Boston "Senator" were scheduled to take place at Washington, D. C., New York and Boston, immediately prior to the first revenue run of each train on March 17.

One set of "Congressional" equipment was to be christened at Washington by Mrs. Alben W. Barkley, wife of the Vice-President, and the other at New York by Mrs. Vincent R. Impellitteri, wife of the mayor of New York City. Sponsor for the "Senator" at Washington was Mrs. Styles Bridges, wife of the New Hampshire senator, while the other set of "Senator" equipment was to be christened at Boston by Mrs. John W. McCormack, wife of the majority leader of the House of Representatives.

Both sets of "Congressional" equipment were displayed to press representatives in special runs on March 11, while the equipment was scheduled to be on public exhibition at various stations on March 12 and 13. Special ceremonies for dedication of particular cars in the train were also scheduled for March 12.

Equipment for the "Senator" was placed on display at Boston and at various stations between Boston and New York by the New York, New Haven & Hartford during the week preceding start of revenue service on March 17.

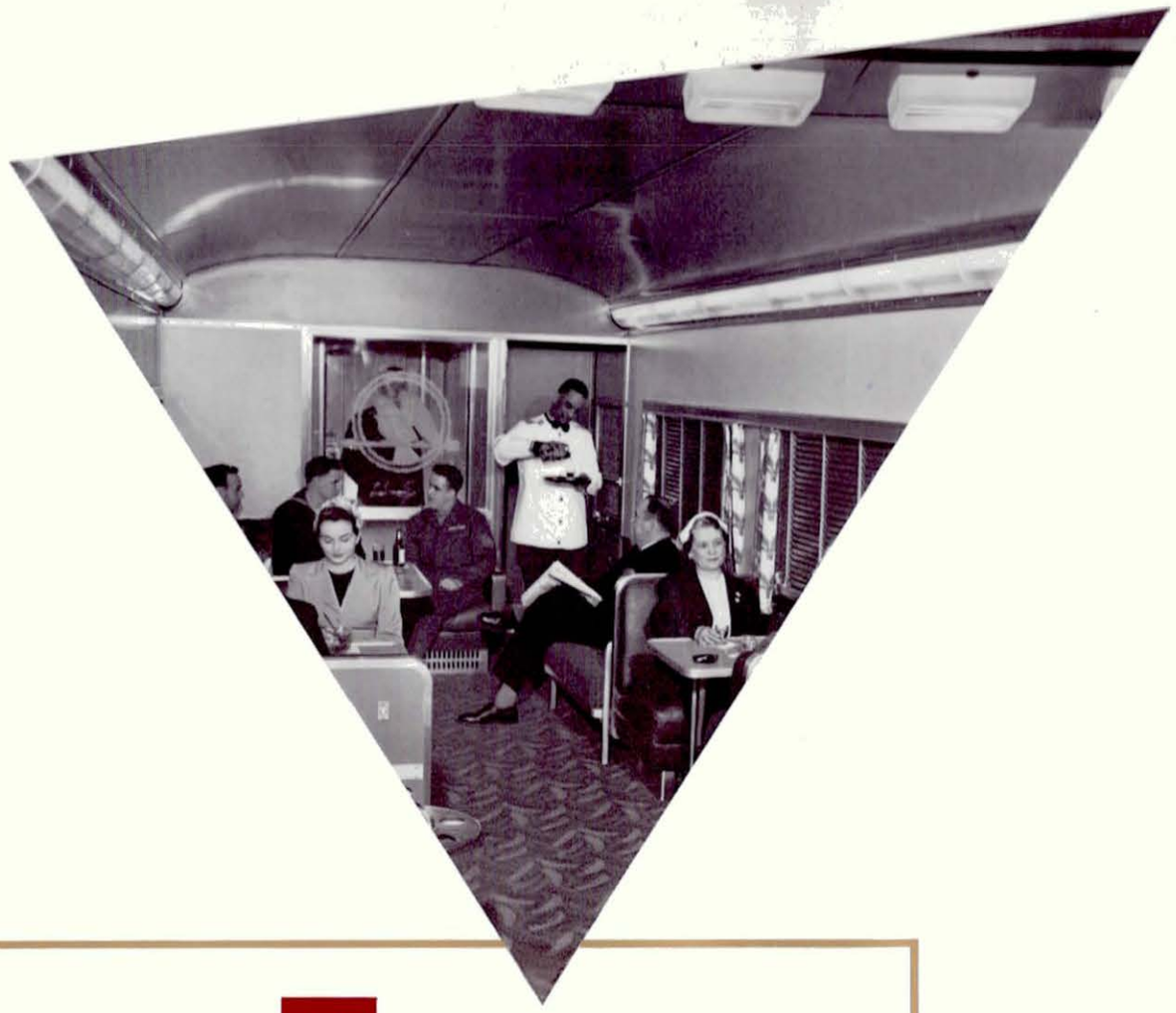
The Morning Congressional

The Senator

The Afternoon Congressional

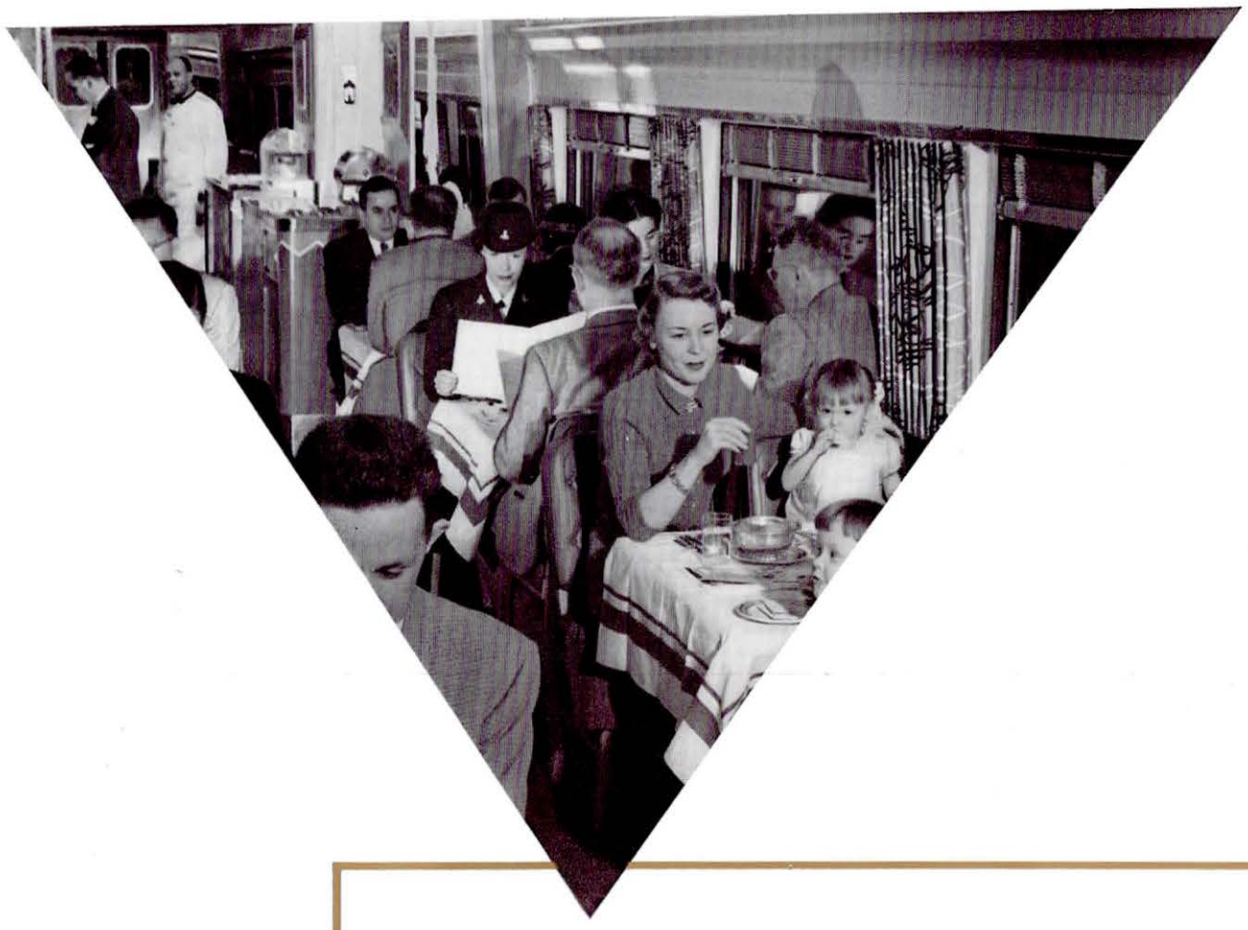
Built by

Budd



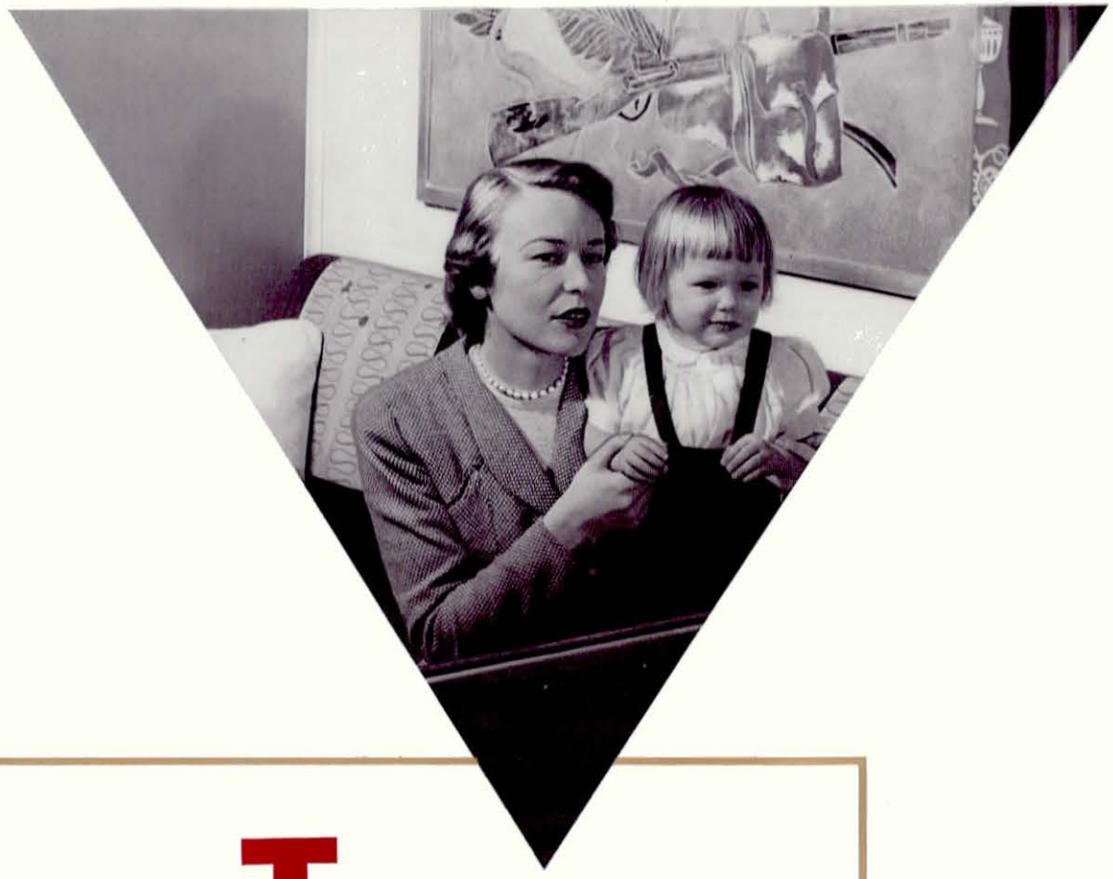
The 64 new cars used to re-equip these popular trains will provide improved service together with high availability.

Budd



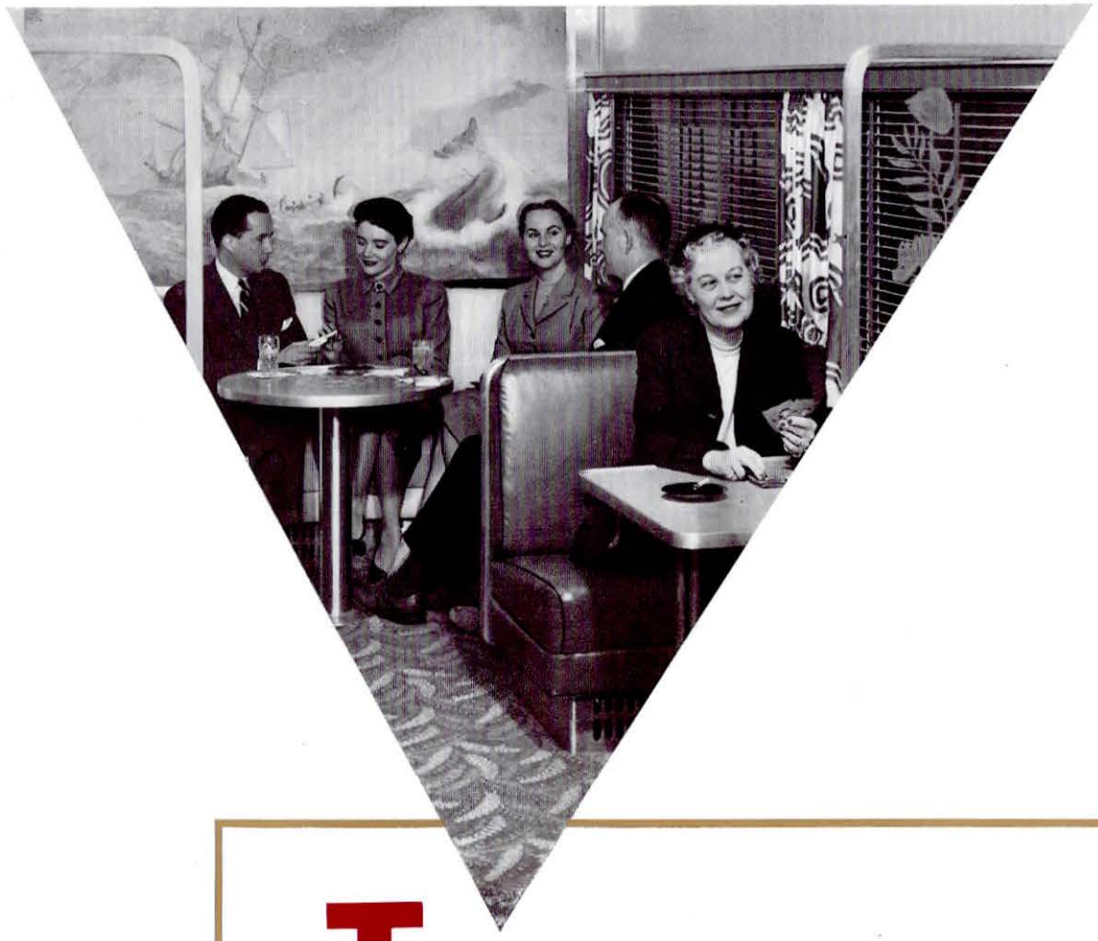
They serve more than 25,000,000 people and the world's greatest concentration of industry, commerce, finance and governmental, diplomatic and military activity.

Budd



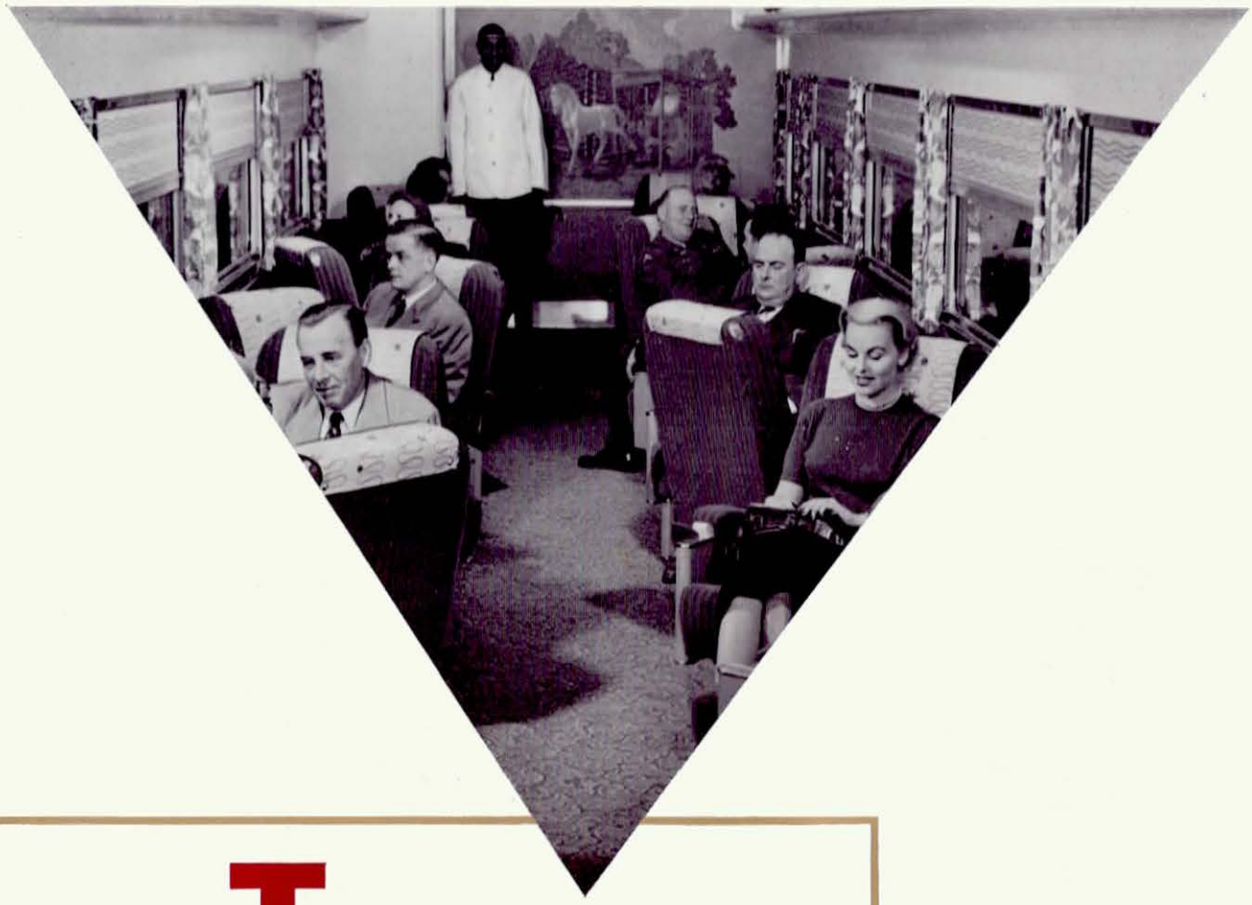
The availability record of Budd equipment is unique, always in the upper ninety per cents. This is true, even, of Budd cars that meet schedules requiring more than 1000 miles every twenty-four hours.

Budd



Their superiority of design and construction has been demonstrated by cars that have travelled more than four and a half million miles without a major overhaul.

Budd



Though Budd cars are invariably placed on high speed schedules, where they frequently see four times the service of the average car, no Budd railway passenger car has ever worn out. There are cases where Budd trains have repaid their purchase price ten times in ten years.

The Budd Company, Philadelphia 32

PIONEERS IN BETTER TRANSPORTATION

Budd

PENNSYLVANIA RAILROAD'S

Built **BUILT CARS TO RE-EQUIP**

THE MORNING CONGRESSIONAL

THE SENATOR

AND

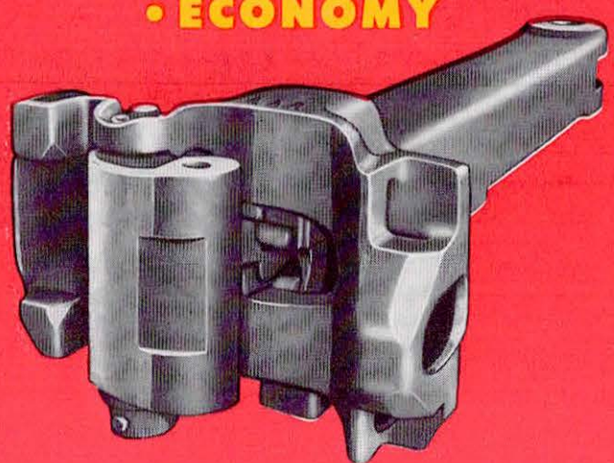
THE AFTERNOON CONGRESSIONAL

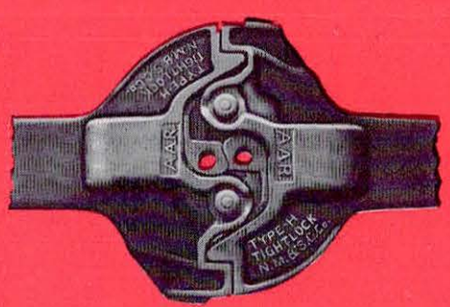
HAVE

AAR STANDARD "H" TIGHTLOCK COUPLERS *and* YOKES

FOR

MAXIMUM
- **UTILITY**
- **COMFORT**
- **ECONOMY**





BY

NATIONAL

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Cleveland 6, Ohio

COUPLERS • FREIGHT TRUCKS • YOKES • FRICTION AND RUBBER DRAFT GEARS • JOURNAL BOXES AND LIDS

NATIONAL *Products* FOR TRANSPORTATION AND INDUSTRY

Est. 1868

A-5

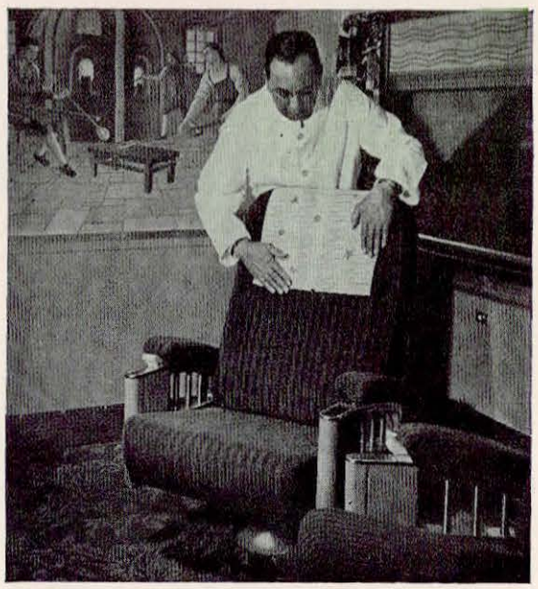
Coach cars for each train are equipped with Heywood-Wakefield Deluxe Reclining Coach Seats

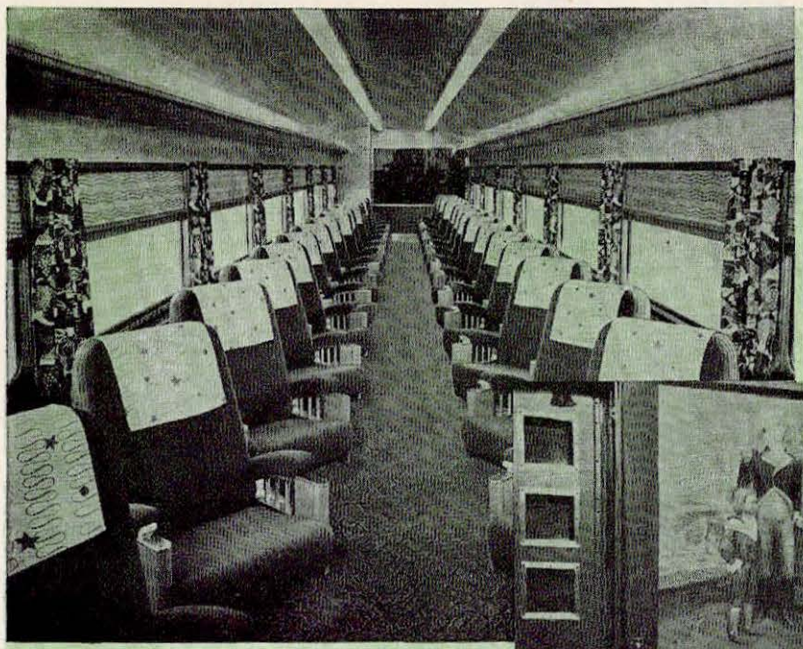
Added Comfort for Pennsylvania

HEYWOOD-WAKEFIELD
EST. 1826

Transportation Seating Division
Gardner, Mass.
Orillia, Ontario, Canada.
In Canada—Railway & Power Engineering Corp., Ltd., Montreal

Heywood-Wakefield Parlor Car Reclining Chairs provide deep-cushioned relaxation for passengers on the 16 Parlor Cars





LEFT—*The Parlor Cars of each train are luxuriously furnished with Heywood-Wakefield Parlor Car Reclining Chairs*

RIGHT—*Lounge and Observation Cars feature attractive Heywood-Wakefield built-in furniture*

Passengers aboard the New Congressionals and Senator

Whether you are modernizing or adding new equipment, Heywood-Wakefield seating can help assure extra profits through extra comfort. Rugged construction and sound engineering keep maintenance costs to a minimum. Each passing year of satisfactory service brings added proof that your investment in Heywood-Wakefield seating pays off in steady traffic dividends.

64 CARS BUILT BY Budd

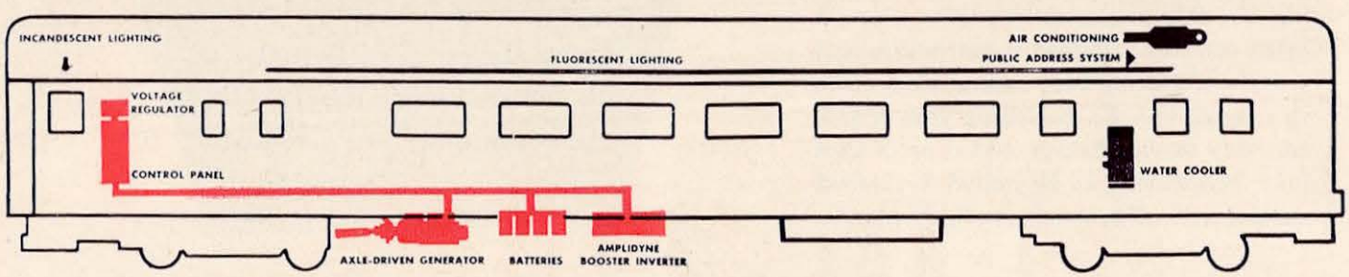
SEATED BY HEYWOOD-WAKEFIELD

Passengers on the Pennsylvania Railroad may now enjoy the new luxurious comfort of the Morning Congressional, the Senator, and the Afternoon Congressional. Built by the Budd Company, sixty-four cars make up the two sections of each train. Included are Parlor Cars, Coaches, Lounge and Observation Cars, Dining, and Coffee Shop Cars. Each incorporates the most modern advancements for pleasant travel. Heywood-Wakefield is proud of its contribution to the splendid accommodations aboard these newest streamliners.

Pennsylvania's New Luxury Cars on "Congressionals"

Budd-built units for "Morning Congressional," "Senator" and "Afternoon Congressional" have last word in passenger conveniences, including improved air conditioning, unusual fluorescent lighting, and public address system

EVERY EFFORT WAS MADE TO PROVIDE THE UTMOST IN PASSENGER COMFORT, WITH EMPHASIS ON LIGHTING AND AIR CONDITIONING.



The complete power-supply system (shown in red) includes a body-mounted axle-driven motor-generator, voltage-control relay, control panels for the generator, start-stop push-button, and amplidyne booster inverter.

and "Senator" Equipped with G-E Axle-Driven Generators

In keeping with the luxurious character of the new Budd-built equipment for the "Morning Congressional," the "Senator" and the "Afternoon Congressional," Pennsylvania Railroad has provided for electrical apparatus that is second to none for the comfort and convenience of the passengers. Reliable performance of such important facilities as fluorescent lighting, air conditioning, and public-address system requires a dependable source of electric power. This is furnished by General Electric axle-driven motor-generators and amplidyne booster inverters on the 56 coaches, parlor drawing room, observation cars, and full length diners.

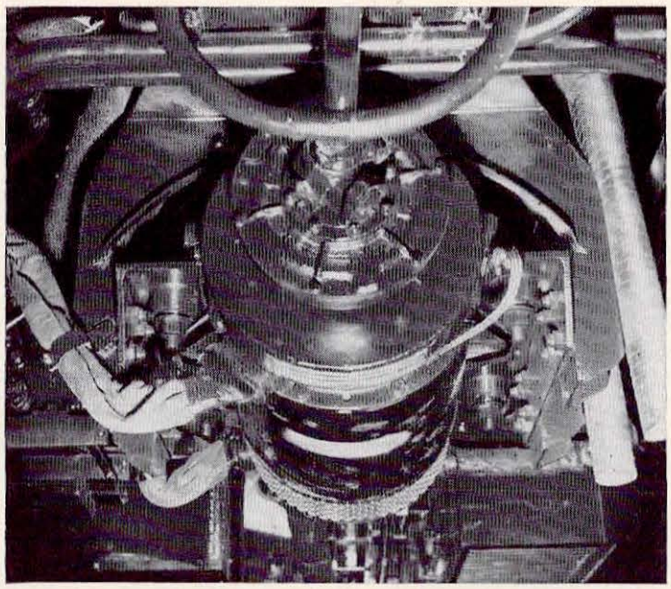
These motor-generators provide ample power to operate electrical facilities furnishing services which appeal to passengers. Full output over a wide range of train speeds reduces demand on battery power and provides high, safe charging currents for low batteries. These proved-in-service conventional d-c power units also have adequate reserve capacity to keep the batteries adequately charged during normal train operation. Rated power capacity is available at low train speeds. Available capacity increases with speed. The units are built for low-cost maintenance and long periods of trouble-free service.

In the complete line of G-E axle-driven motor-generators there is a rating that will provide a power supply to meet your equipment requirements. Over 4000 G-E axle-driven equipments have already been built. Also, 31 G-E service shops are strategically located around the country to help you with your maintenance problems. Ask your G-E representative for complete information about G-E axle-driven motor-generators. *General Electric Co., Schenectady 5, N. Y.*

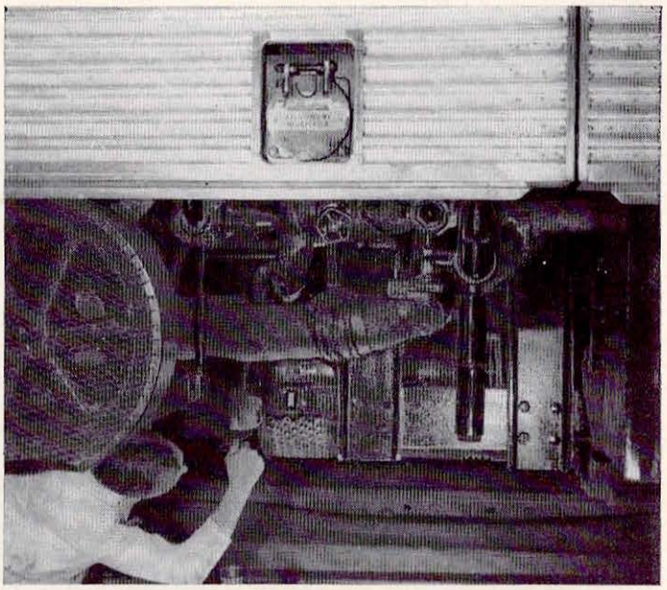
PERFORMANCE CHARACTERISTICS OF G-E AXLE-DRIVEN GENERATORS

Motor-generator, Type GMG	150A6	150A4	150A7	150A9
Generator Rating, kw	20–25	20–25	30–35	25–30
regulated volts	37.5	75	75	134
amp (125% min. full load speed)	535	267	414	187
Nominal induction motor rating, hp	25	25	25	25
Min. Speed for 85% Voltage, rpm (no load)	520	520	690	590
Min. Speed for 100% Voltage, rpm (full load)	690	690	915	780
Max. Permissible Speed	*3780	3600	3780	*2470
MAXIMUM CURRENT (AXLE-DRIVEN)				
Current Limit Cut-in—nominal, amp (min. full load speed)	562	286	395	185
Current Limit Cut-in—nominal, amp (max. operating speed)	760	387	533	250
Max. Amp at Max. Operating Speed—nominal (85% voltage)	912	465	640	300
MAXIMUM CURRENT (MOTOR-DRIVEN)				
Current Limit Cut-in, amp (nominal)	402	207	207	116
Max. Amp. 85% voltage (nominal)	490	253	253	141

*All P.R.R. machines have 2.54 gear ratio which produces an operating speed of 1900 RPM at 80 MPH.



The General Electric axle-driven motor-generator has a capacity of 25–30 kw and is directly connected to a 25-hp, 220-volt, 3-phase, 60-cycle motor. The system is rated at 110 volts (nominal).



Inspection and servicing are simplified by the accessible location of the axle-driven motor-generator. Standby power in yards or terminals is provided through receptacles that supply 220-volt, 3-phase, 60-cycle power for driving the motor-generator.

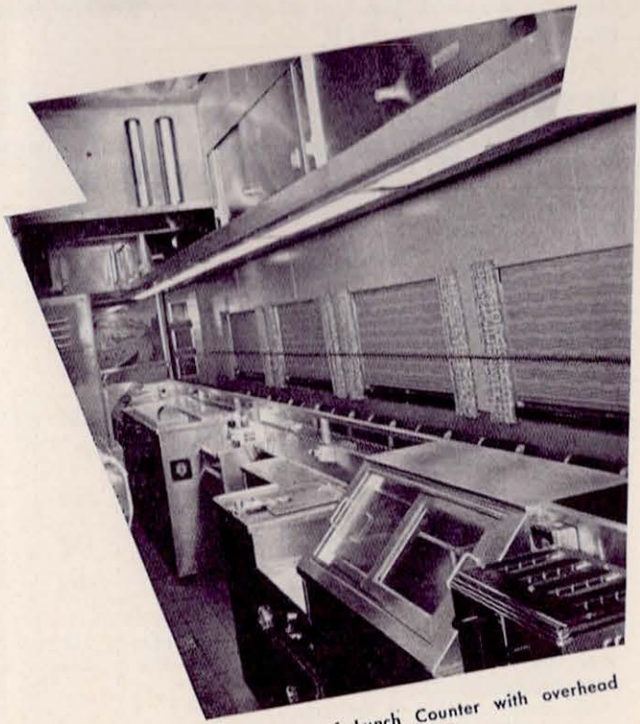
You can put your confidence in—

GENERAL ELECTRIC

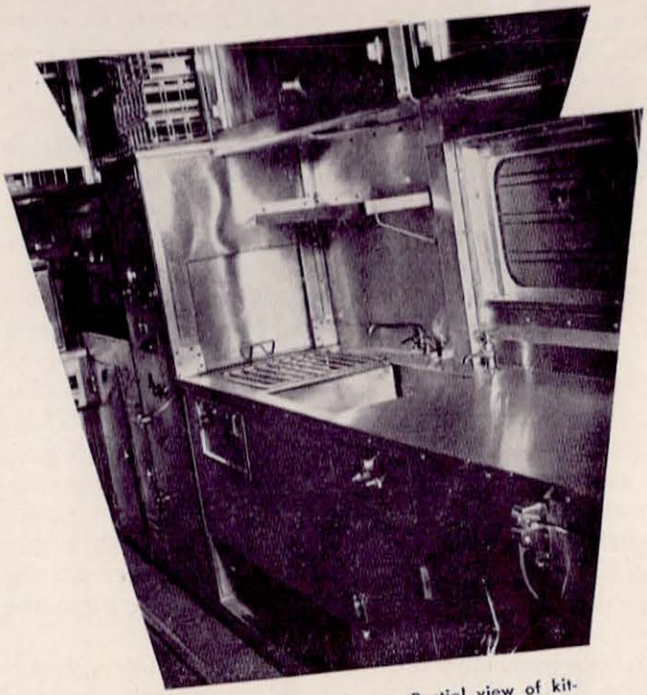
122-13

For THE PENNSYLVANIA RAILROAD'S . . .

"The Morning Congressional", "The Senator", & "The Afternoon Congressional"



Rear view of Lunch Counter with overhead lockers.



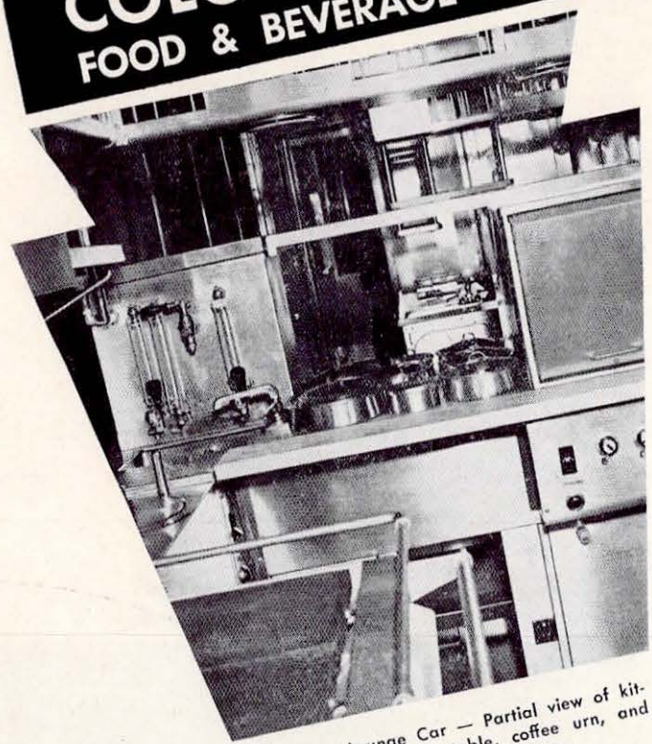
Kitchen-Bar-Lounge Car — Partial view of kitchen, showing cook's refrigerator, dresser, pot sinks, and new AN-CO fully automatic dishwasher and soiled dish table.

Coffee Shop Lunch Counter with overhead lockers & fluorescent lighting fixtures, and quick service kitchen — (view from one end).

COLONNA special built FOOD & BEVERAGE SERVICE EQUIPMENT

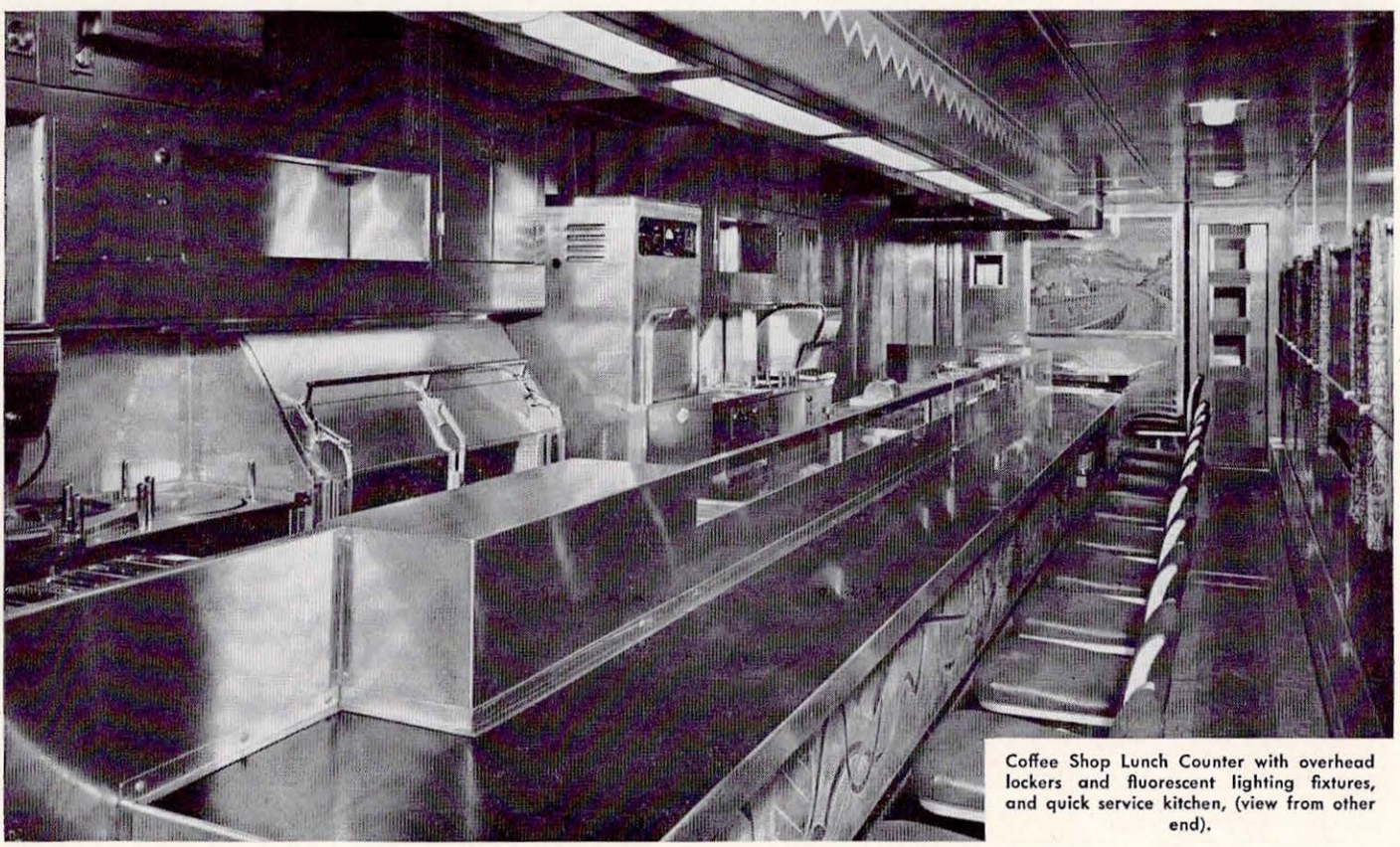
cars by BUDD

Westmoreland & Boudinot Sts., Philadelphia 34, Pennsylvania



Kitchen-Bar-Lounge Car — Partial view of kitchen, showing steam table, coffee urn, and warmers at serving station.

Kitchen-Bar-Lounge Car — Partial view of kitchen, showing steam tables, electric range, and AN-CO Duo-charcoal electric broiler.

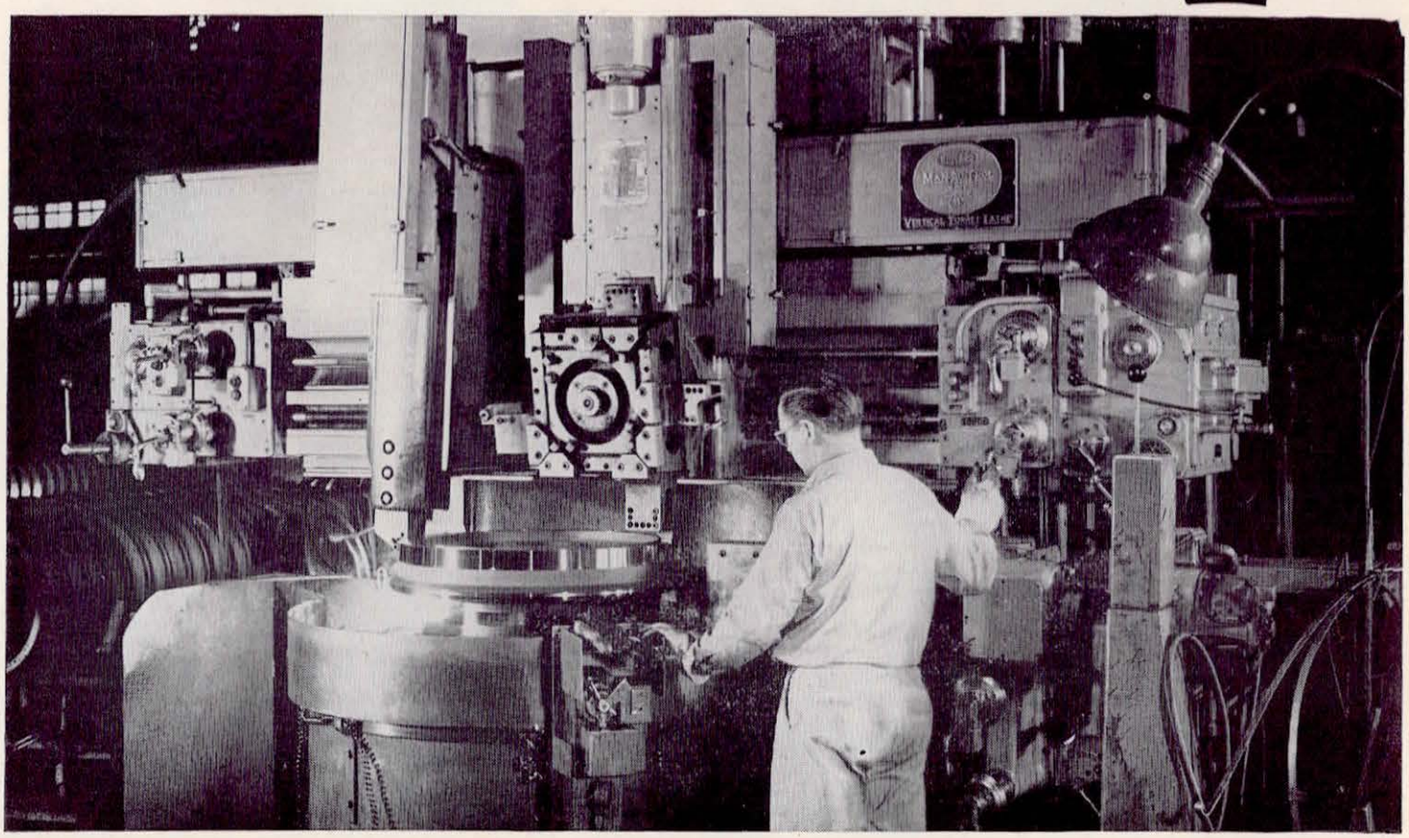


Coffee Shop Lunch Counter with overhead lockers and fluorescent lighting fixtures, and quick service kitchen, (view from other end).

Aerial view of the Edgewater Steel Company Oakmont plant, near Pittsburgh, Pa.

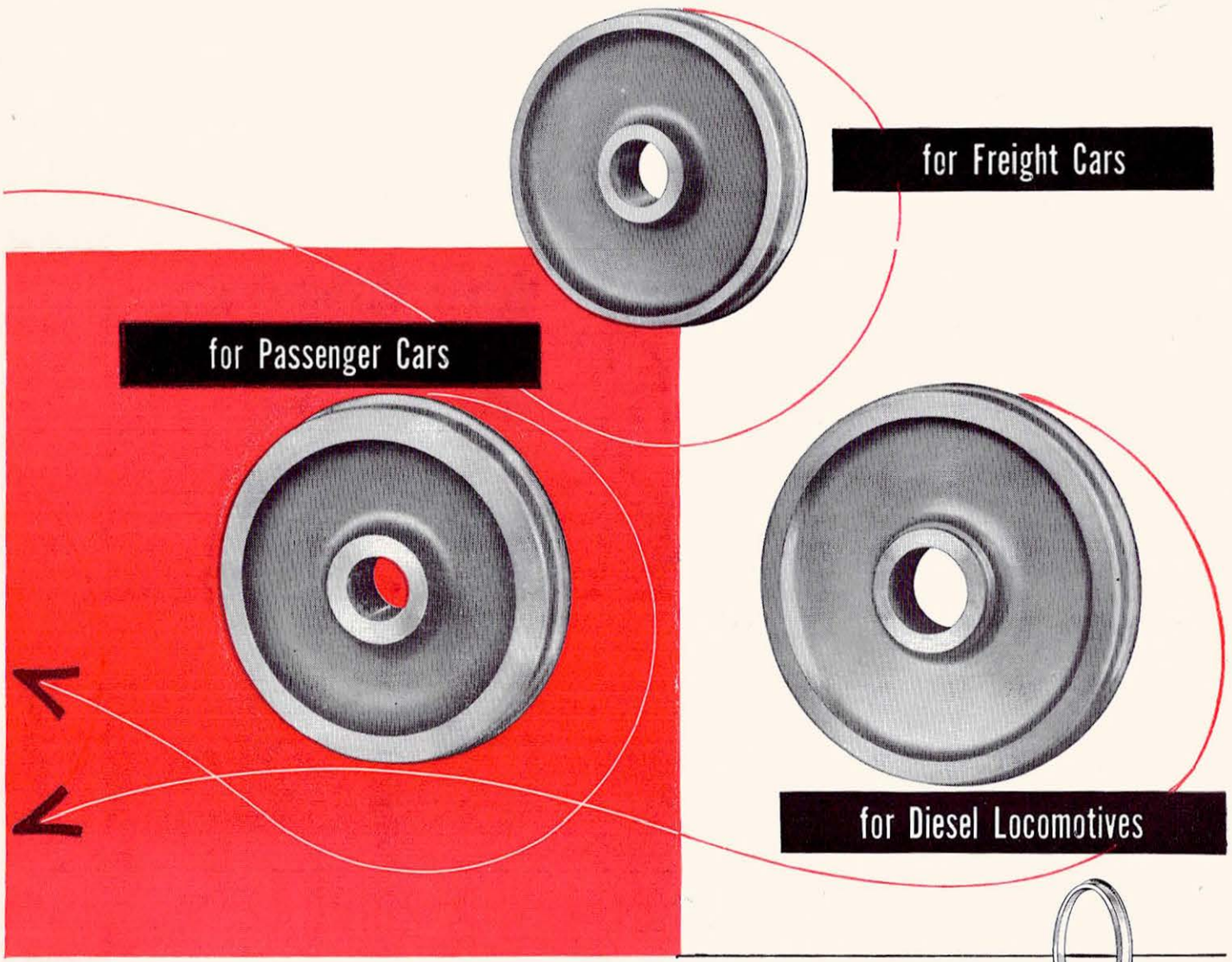
Edgewater

Edgewater rolled steel wheels for freight cars, passenger cars and Diesel locomotives are used by the country's leading railroads. They are made from steel produced in our own plant, and meet AAR and ASTM specifications. All manufacturing operations are under close control, and rigid inspection insures highest quality.



One of the precision car wheel lathes used to machine Edgewater Rolled Steel Wheels.

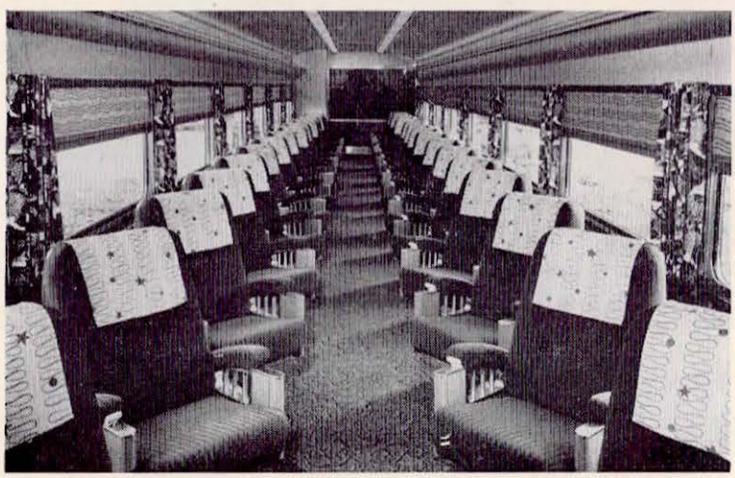
Rolled Steel Wheels



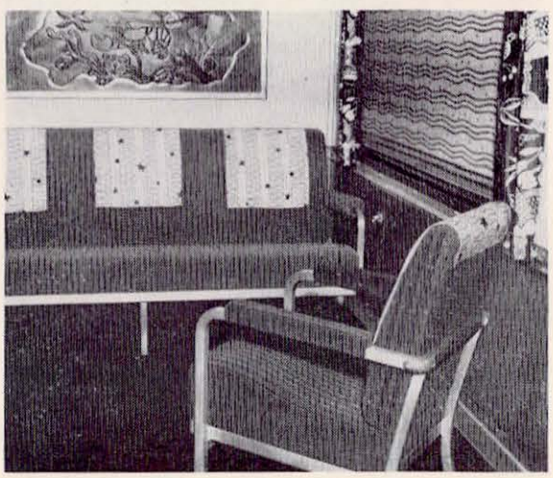
Edgewater Steel Company
Pittsburgh, Pa.

makers of
- ROLLED STEEL TIRES
- ROLLED STEEL WHEELS
- DRAFT GEARS

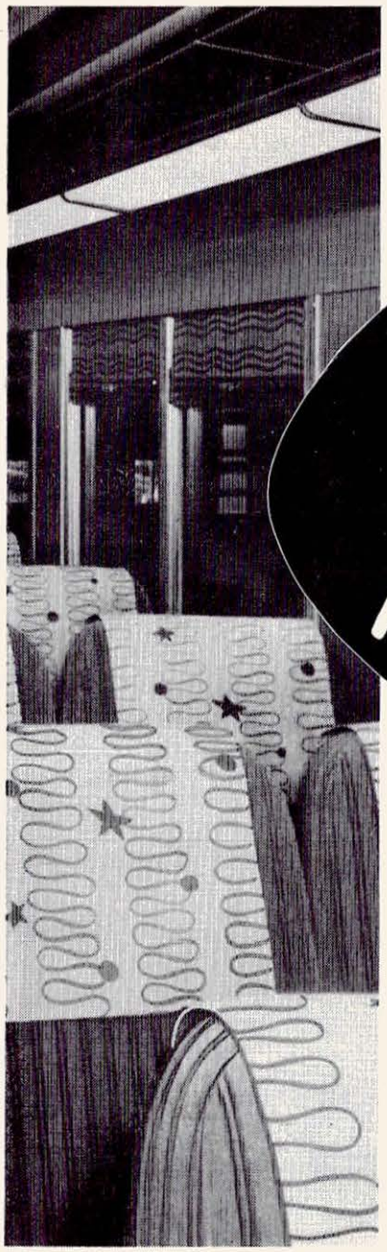
New comfort and luxury are achieved in the new coaches by Budd. Reclining-type seats and harmonious Goodall Fabrics decor contribute to passenger appeal.



The newly designed Parlor Cars by Budd feature Goodall Fabrics among their many inviting appointments.



Goodall Fabrics are an important part of the new Drawing Rooms in these Budd cars.



Pennsylvania R. R. Honors Goodall!

Another 100% Goodall Fabrics Installation

All woven fabrics in the New "Congressionals" and "Senator" are Goodall

TRADITIONAL ELEGANCE is freshly interpreted in "The Morning Congressional", "The Senator" and "The Afternoon Congressional" . . . all-new trains of the Pennsylvania Railroad. In line with the general high quality and luxury of appointments, Goodall Fabrics are used throughout for upholstery (woven), window shade facings, draperies, and headrest covers. Like all Goodall Fabrics these are *Blended-to-Perform* to give long wear, economical maintenance, and lasting beauty.

Goodall fabrics
Subsidiary of Goodall-Sanford, Inc.
THE FINEST NAME IN FABRICS

Where durability and luxury are the keynote—
Goodall Fabrics are preferred

© 1952, Goodall Fabrics, Inc. Subsidiary, Goodall-Sanford, Inc. (Sole Makers of World-Famous PALM BEACH* Cloth) *Registered Trade Mark
GOODALL FABRICS, INC. • NEW YORK • BOSTON • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES

Adlake TRADE MARK

95th year of serving the transportation and building industries

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

Manufacturers of ADLAKE Specialties and Equipment for the Railway Industry

NO WONDER THAT EVERY MAJOR

In the Pennsylvania's crack new Senators and Congressionals

clearly the windows are

Adlake
TRADE MARK

Yes, "Clearly" is the word to describe the ADLAKE *Breather* Windows in the Pennsylvania Railroad's Senators and Congressionals—because these windows will remain crystal clear at all times, with no dehydrants needed!

The patented "breather" keeps air between the two panes of glass adjusted to all changes of temperature and humidity. What's more, if panes are accidentally broken in service, *only the broken glass need be replaced*—and all necessary work can be done right in your own yards!

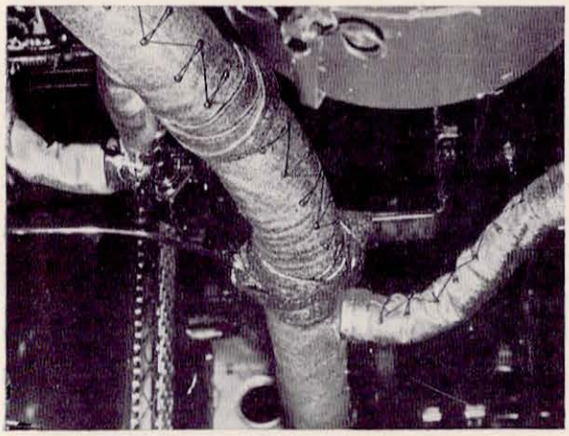
Yes, passengers on the Morning Congressional, The Senator and the Afternoon Congressional will be twice blessed—for, in addition to the luxurious interiors, they will have an always-clear view of the scenery outside! And, in addition, they will enjoy the smart modern design of the ADLAKE door and curtain fixtures and other hardware that add rich accents to the appearance of the cars.

For complete details on the exclusive construction features of ADLAKE *Breather* Windows, drop a card to The Adams & Westlake Co., 1109 N. Michigan, Elkhart, Indiana. No obligation, of course.

AMERICAN RAILROAD HAS SPECIFIED ADLAKE EQUIPMENT

Johns-Manville insulations provide comfort...

in the Pennsylvania's new trains



Thermo-Wrap Pipe Insulation is shown here applied to steam heat lines on a car of one of the new Pennsylvania trains. Note how this flexible insulation adapts itself to curvatures.

Passengers riding in the new Budd-built Pennsylvania passenger cars can't *see* Stonefelt and Thermo-Wrap . . . but every mile of travel will be more comfortable because of these Johns-Manville insulating materials.

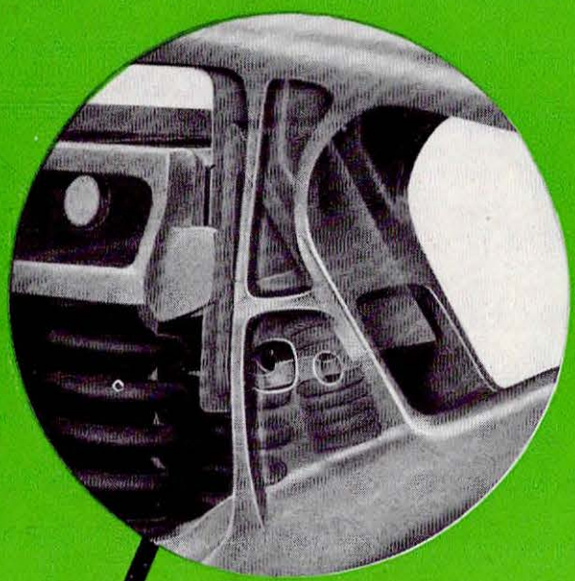
J-M STONEFELT INSULATION, installed in the car superstructure, helps keep interior temperatures uniform at all times and muffles external noises. Specially designed for passenger cars, Stonefelt is a strong, lightweight, fire- and moisture-resistant blanket type insulation made of treated mineral fibers. It retains its rated thickness and does not settle even under severe vibration.

J-M THERMO-WRAP INSULATION conserves heat and provides outstanding mechanical protection to steam heat lines throughout the train. It is an improved lace-on type insulation that is easy to install, fits tight and stays tight. Thermo-Wrap's neoprene-coated jacket protects pipes against moisture, abrasion, and the impact of flying ballast. It can be applied to both straight and curved pipe.

For further information about these and other J-M products for railroads, write Johns-Manville, Box 290, New York 16, N. Y.

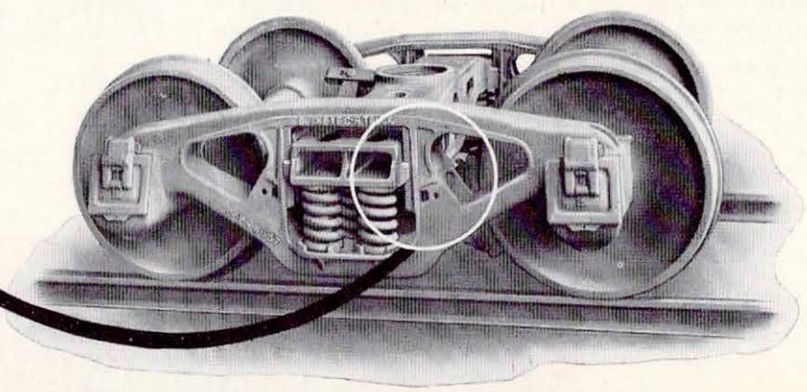
JOHNS-MANVILLE JM PRODUCTS **Johns-Manville** **94 YEARS OF SERVICE TO TRANSPORTATION**

In the Buckeye C-R Truck



FULL WIDTH BEARING IS EASY ON THE SEAT

The full width bearing of the friction wedge against the side frame and the bolster results in low unit pressures on these seats thereby reducing wear and increasing service life.



B

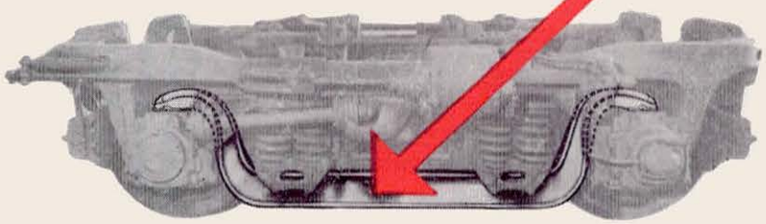
THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

IN THE NEW *Streamlined Cars*

NOT ALL OF THE *Beauty* IS ON THE SURFACE

Down underneath . . . in the truck assembly, there is another bit of metal working beauty . . . beauty from the standpoint of *DURABILITY, LIGHTNESS and SAFETY.*



Partly hidden from view are the newly developed "CANTON I-BEAM EQUALIZERS" whose advanced design cuts material costs and weight practically in half . . . yet provides greater *RIGIDITY and SERVICE*

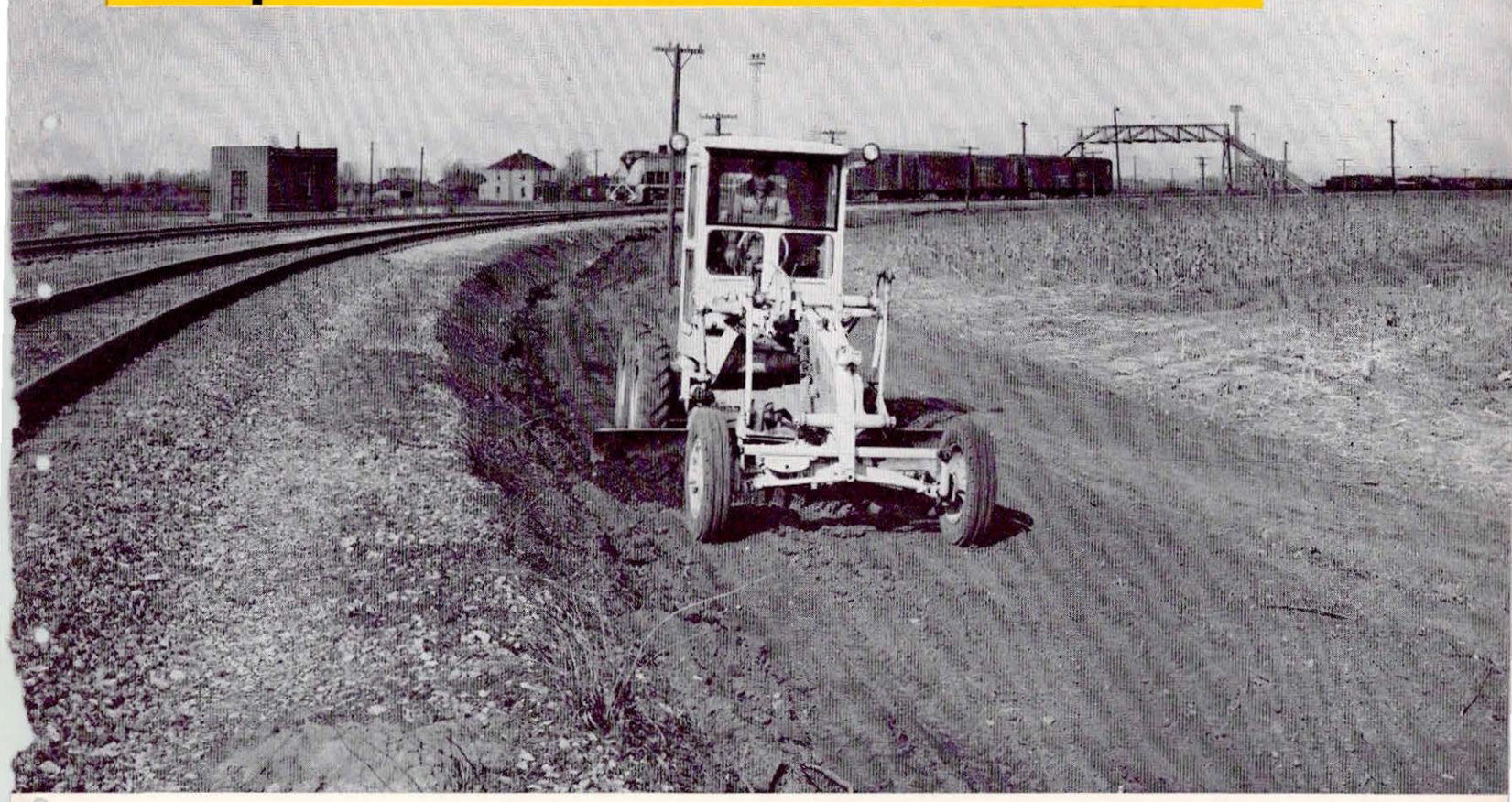
PENNSYLVANIA'S most modern streamliners, the ***CONGRESSIONALS*** and the ***SENATOR...*** both built by the ***BUDD COMPANY*** are fully equipped with

CANTON I-BEAM EQUALIZERS

THE CANTON DROP FORGING AND MANUFACTURING CO.
CANTON 2, OHIO

DROP FORGINGS FOR PARTICULAR USERS SINCE 1903

"Cat" No. 212 Motor Grader slashes maintenance costs on 24-mile right of way!



This "Cat" No. 212 Motor Grader is making a three-foot cut about 18 feet wide in the Davis Yards of the Alton & Southern R. R., East St. Louis, Illinois. Working on a 24-mile right of way, the No. 212 has proved itself a money saver to Roadmaster C. B. Blackman. Its blading efficiency and tandem drive action rate high with Operator James Wilson.

It's been more than two years since the Alton & Southern R. R. purchased this "Cat" No. 212 Motor Grader. That's long enough to show how many jobs this versatile machine can do on right-of-way maintenance.

Here's one example. Cutting down embankments once cost the Alton & Southern more than $400 per job for labor alone. The No. 212 slashed this sum to $5.76 and shaved the working time from 2 days to 4 hours. The No. 212 also proved itself a money saver building roads, sloping fills, removing snow, eliminating irregular fills, pulling ties and taking up track. It's so handy, it's kept busy all the time.

Wherever you're using trucks for track and road-bed maintenance, a "Cat" Motor Grader is an essential tool. Like all "Caterpillar" equipment, it's sturdily built. Of course, with good care, it will give you longer wear—and that's in line with defense demands. Making equipment work harder and last longer is your job, as well as the job of more than 300 "Caterpillar" Dealer parts stores and shops in the U. S. and Canada.

CATERPILLAR, PEORIA, ILLINOIS

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES
TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

YOUNGSTOWN STEEL CAR WELDMENTS CHOSEN BY *Budd* FOR "SAFETY"

Luxury

Pennsylvania's new BUDD BUILT
Congressional and Senator

Safety

End underframe weldments by
Youngstown Steel Car Corporation

Yocar's developed technique for fabricating and welding high strength steels, plus rigid inspection, assures Budd a safe foundation upon which ultimate luxury is offered to the public.

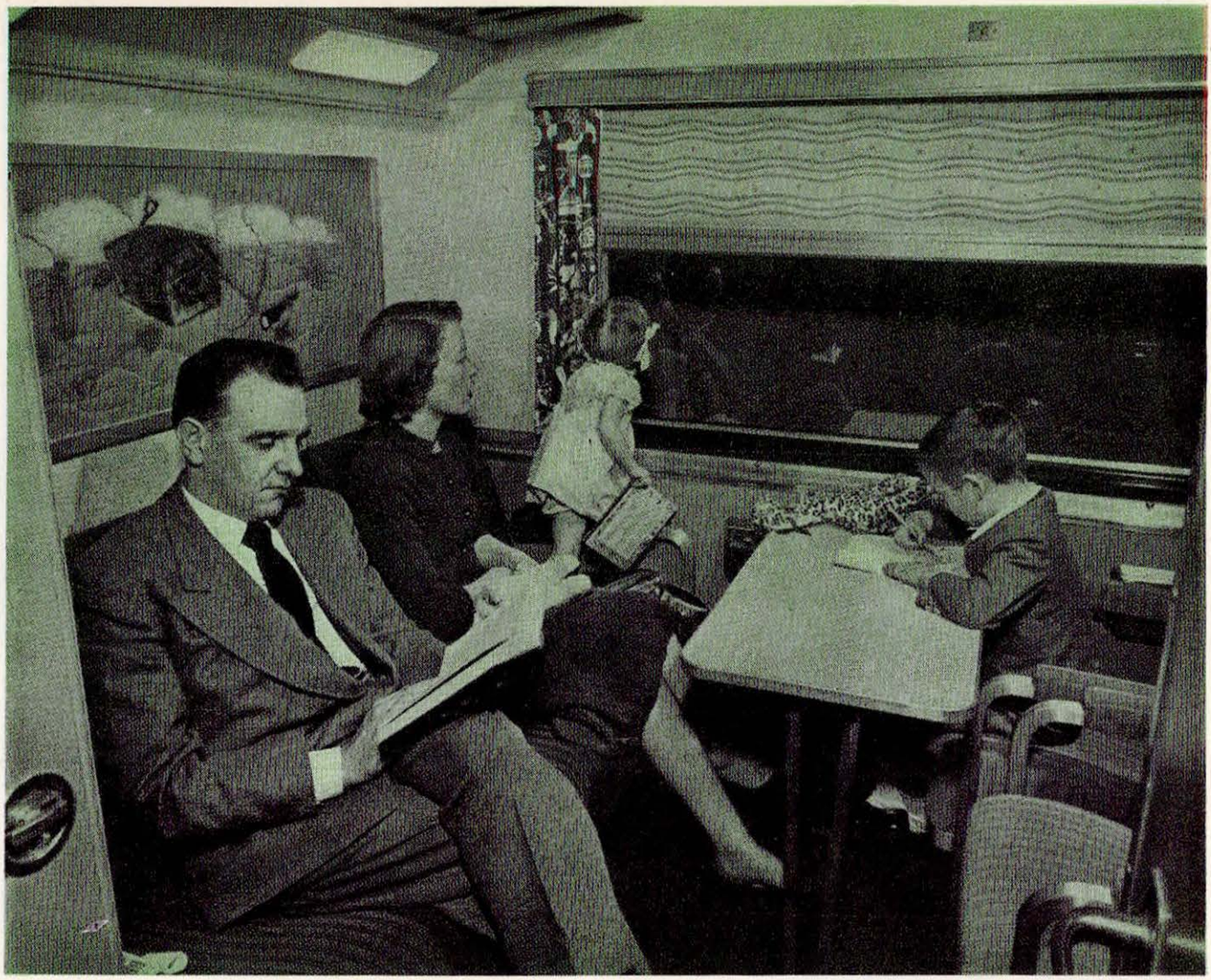
Now thousands of passengers, enjoying timesaving travel provided by Pennsylvania's Congressional and Senator, are assured of safety and luxury.

Yocar may be able to provide you with better weldments.

YOUNGSTOWN STEEL CAR CORPORATION

NILES 6 · OHIO

YOCAR

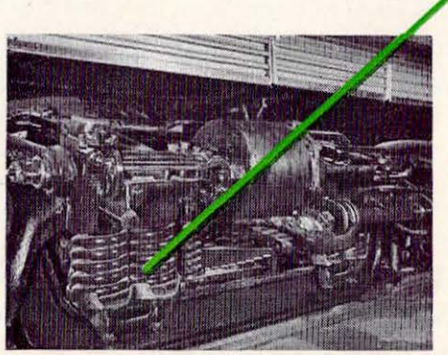


for that restful ride...

Basic to the sheer riding comfort of the sleek, new Budd-built cars on the Pennsylvania Railroad's famed trains . . . The Morning Congressional, The Senator and The Afternoon Congressional . . . are the springs, fabricated by Alco's Railway Steel-Spring Division.

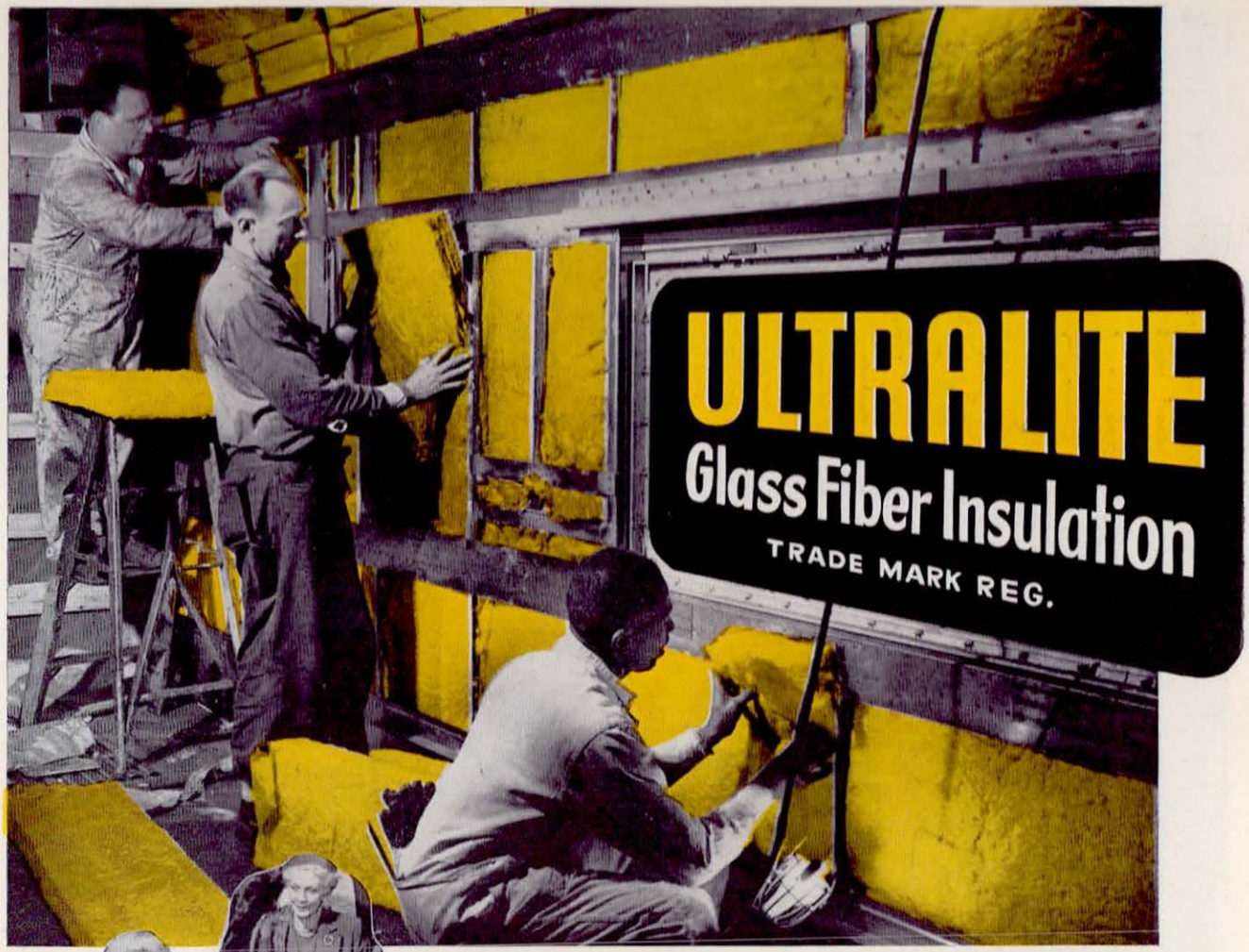
Both helical and elliptical compression springs are used in the Budd cars. And like all RAILWAY STEEL SPRINGS they make important contributions to the safety, durability and economic maintenance of the entire rolling stock.

To make sure you get these advantages together with Alco's advanced engineering in modern rail equipment design, always specify RAILWAY STEEL SPRINGS.



Railway Steel-Spring Division

AMERICAN LOCOMOTIVE COMPANY



A "Congressional" Investment

. . . that meets with complete public approval!

From the moment he steps on board the new "Congressionals" and "Senators", the passenger realizes that the Pennsylvania and The Budd Company have spared nothing to make his ride the safest, smoothest and most comfortable he has ever experienced.

Contributing a great deal to the comfort of these ultra-modern trains is ULTRALITE thermal and acoustical insulation. Its long glass fibers soak up and filter out objectionable noise. They stand guard against heat and cold that can threaten passenger comfort. And year in, year out, resilient blankets of lightweight ULTRALITE will stay on the job, because neither time nor travel can cause them to shake down, settle, pack or disintegrate.

That's why ULTRALITE has been the insulation choice for many years in modern streamline railroad passenger cars. That's why ULTRALITE has won such ready acceptance throughout industry wherever there is a need for effective, economical and permanent control of heat, cold, and sound.

GUSTIN-BACON ULTRALITE INSULATION MANUFACTURING CO.

"ULTRALITE" . . . the miracle fiber, developed and manufactured from glass, by Glass Fiber Division of

GUSTIN-BACON MANUFACTURING CO.

KANSAS CITY, MISSOURI

Keeping pace with the Nation's industrial requirements through research and development—our 54th year.

On remodeled coaches . . . as on the newest luxury trains—

it's NP automatic END DOOR OPERATORS

Today, more than ever before, the operation of end doors on passenger coaches everywhere is easier, quicker, *safer.*

For literally dozens of important railroads have made it standard practice to install NP Automatic End Door Operators not only on new cars, but also on all reconditioned cars.

The reasons are obvious: with NP Automatic End Door Operators, doors open instantly at the mere touch of a finger; they remain open for a sufficient time to allow passage, then close smoothly, silently, safely!

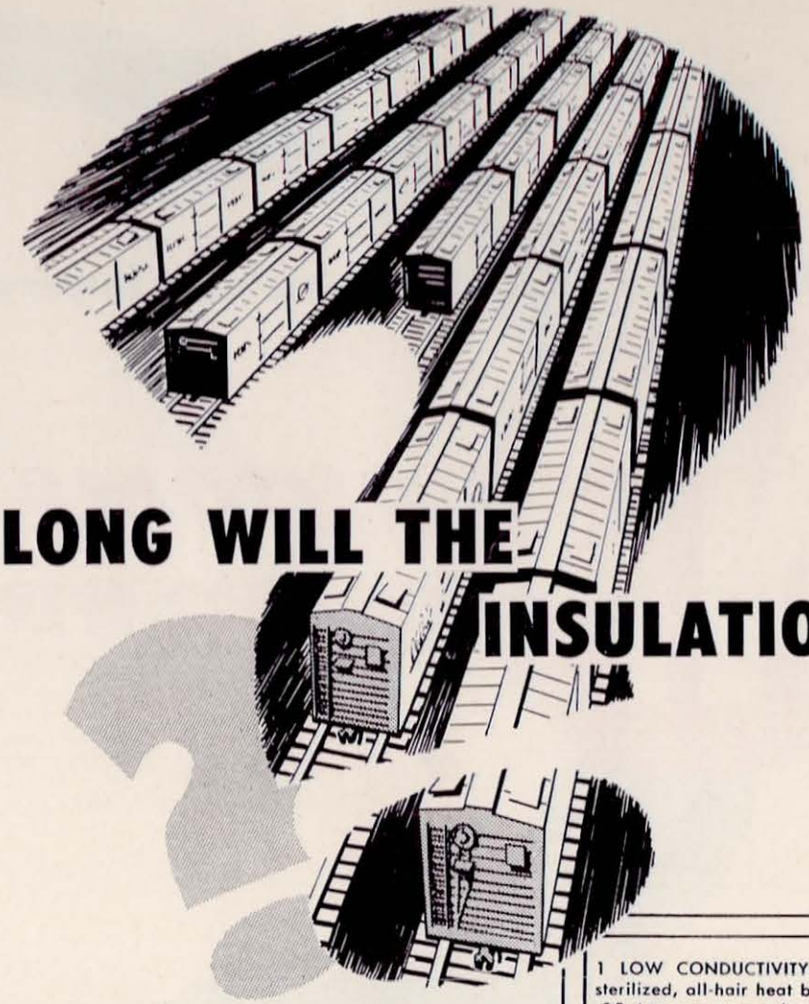
NP Automatic End Door Operators have proved their worth in terms of passenger safety and convenience. Moreover, they are trouble-free, require little maintenance, and effect real savings in air-conditioning costs.

Our Publication No. 1063 gives complete information. Write today.

NATIONAL PNEUMATIC CO., INC.

Graybar Building, New York · 125 Amory Street, Boston 19, Mass. · McCormick Building, Chicago
Represented in Canada by Railway & Power Engineering Corp., Ltd., Toronto

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL AND SAFETY EQUIPMENT



HOW LONG WILL THE INSULATION LAST?

Streamlite HAIRINSUL
Outlasts the Life of the Car!

The installation of Streamlite Hairinsul into new refrigerator cars is a one-time investment, because it *outlasts the life of the car,* and can be used again and again.

The successful use of all-hair Hairinsul in refrigerator cars for nearly half a century is the best testimony that service conditions never impair its high insulating efficiency.

Some of the major reasons why Streamlite Hairinsul is specified by leading refrigerator car lines are given at the right. Write for complete data.

1 LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.

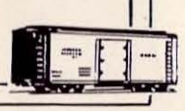
2 LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

3 PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

4 EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

5 COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

6 HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefor has high salvage value. No other type of insulation offers a comparable saving.



Dept. H-24, Merchandise Mart, Chicago 54, Ill.

Install "SAFETY" Electro-Mechanical Air-Conditioning Equipment

with Outstanding Design Refinements for...

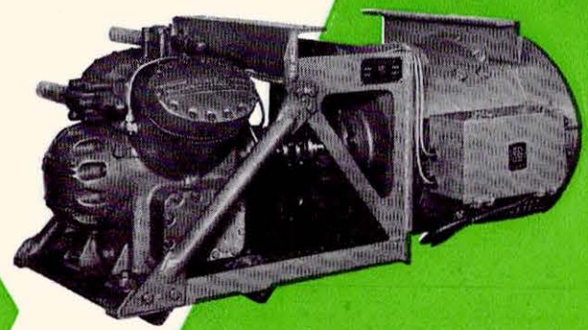
. . . more cooling capacity
. . . lower power load
. . . lower service costs

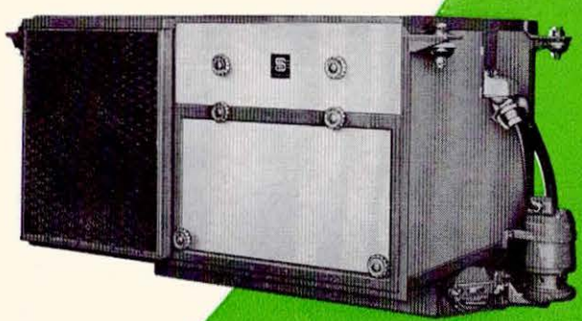
Available in 2 Combinations:

- **Direct-driven compressor and evaporative condenser**
- **Direct-driven compressor and air-cooled condenser**

Direct-driven compressor..

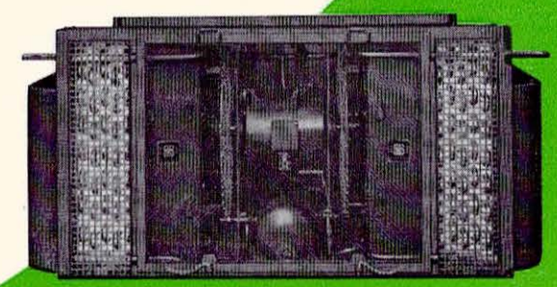
- eliminates belts
- has modern, efficient compressor for quiet operation . . . long life
- unit completely accessible for servicing





Evaporative condenser...

- maintains capacity...filtered air and large volume spray keep coil clean
- spray is non-clogging and sump can be flushed quickly
- all parts easily accessible



Air-cooled condenser...

- large coil surface and air volume provide rated capacity without use of water sprays
- recommended for service when maximum operating conditions do not warrant Evaporative Condenser
- available with water spray for unusually heavy cooling requirements

THE SAFETY CAR HEATING AND LIGHTING COMPANY INC.

NEW YORK · CHICAGO · PHILADELPHIA · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Air-conditioning Equipment • Genemotors • Generators • Fans • Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Motor Alternators • Dynamotors • Motor Generators • Dual Voltage MG Sets

ANOTHER RAILROAD

ON THE TRACK OF INCREASED PROFITS!

SOUTHERN

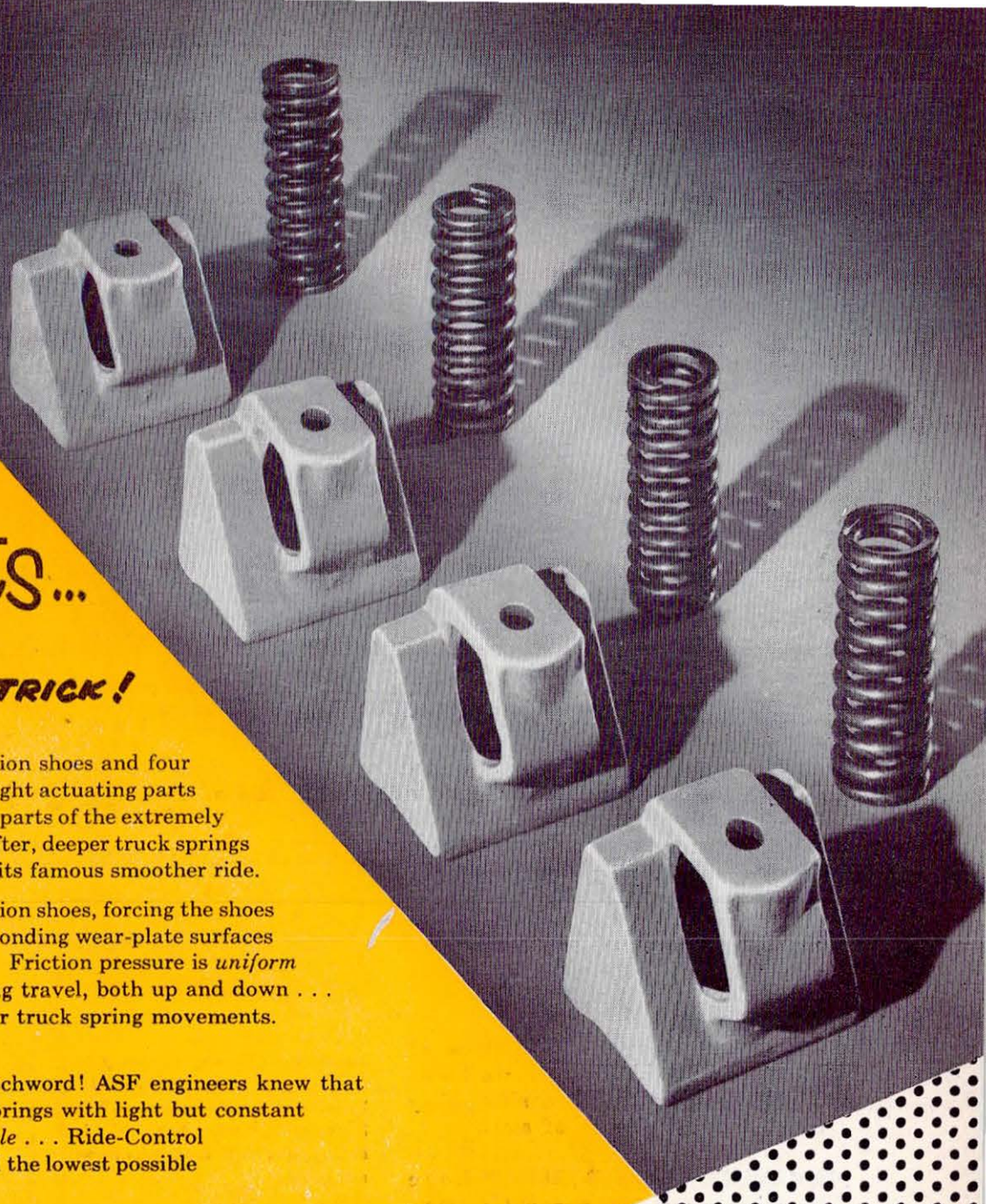
● Recently the Southern Railway System instituted a program for pressure treatment of decking and siding on its gondola, flat and stock cars. Coming years will show the wisdom of this move. Pressure-treated decks and sides are expected to give at least three times as much service as untreated materials. Replacement costs are cut in proportion. And since pressure-treated cars spend less time in repair shops, their yield of revenue is higher. With these multiple savings, return on the cost of pressure treatment may average more than 60% annually.

We will be glad to make an analysis and report of your potential savings through the use of pressure-treated lumber. Such a report will be based on your rolling stock and purchasing procedures. Phone, write or wire Mr. R. H. Bescher, Manager, Technical Department, Orrville, Ohio.

THE SOUTHERN SR SERVES THE SOUTH

KOPPERS **PRESSURE-TREATED WOOD**

KOPPERS COMPANY, INC. · Pittsburgh 19, Pa.



Just Eight Parts...

THAT'S THE WHOLE TRICK!

You are looking at four rugged friction shoes and four special Ride-Control springs. Just eight actuating parts per truck! And they are the working parts of the extremely simple, yet positive *control* for the softer, deeper truck springs which give the Ride-Control Truck its famous smoother ride.

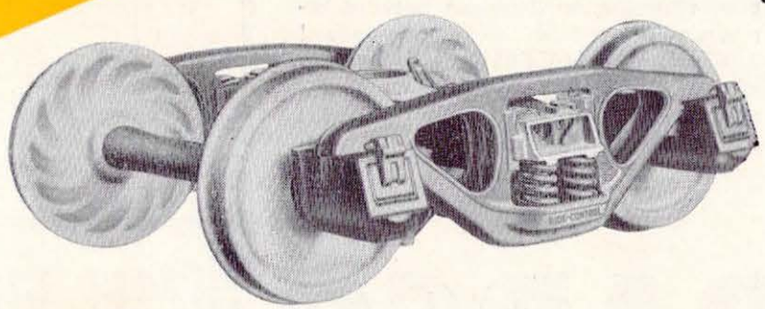
These springs are fitted into the friction shoes, forcing the shoes upward and outward against corresponding wear-plate surfaces on the two side frames of the truck. Friction pressure is *uniform* throughout the entire range of spring travel, both up and down . . . regardless of varying bolster loads or truck spring movements. Thus, *control* is ever present.

Simplicity always has been the watchword! ASF engineers knew that if they could combine long-travel springs with light but constant friction control . . . *and keep it simple* . . . Ride-Control Trucks would give longer service and the lowest possible maintenance costs. And they do!

AMERICAN STEEL FOUNDRIES
410 N. Michigan Ave., Chicago 11, Illinois

Canadian Sales:
International Equipment Co., Ltd., Montreal 1, Quebec

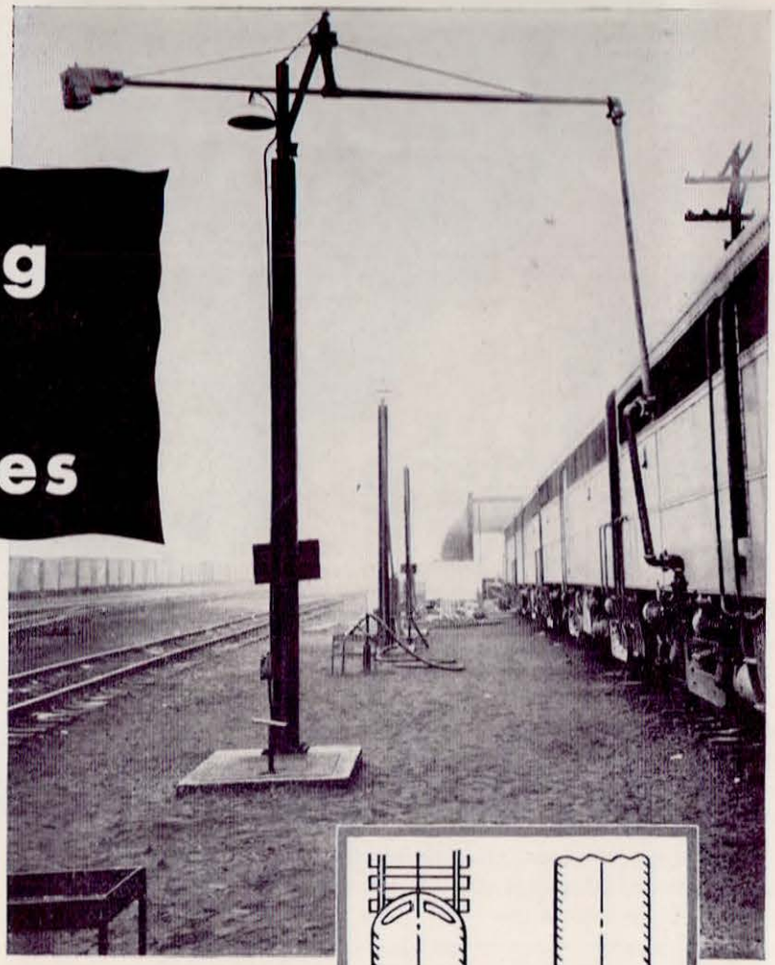
Mint Mark of ◯ Fine Products



ASF Ride-Control® Truck

New!

For Fueling Diesel Locomotives



HERE is Barco's new assembly for fueling diesel electric locomotives! Specially designed for railroad service, it gives you everything you want for a permanent installation.

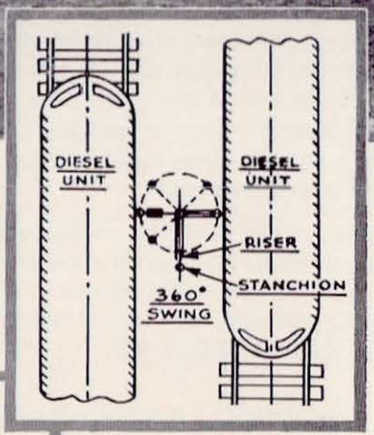
FLEXIBLE, VERSATILE! Assemblies are fitted with Barco Flexible Ball Joints in the piping which permit quick fueling connections to tracks on either side — CLOSE SPOTTING OF ENGINES IS NOT NECESSARY.

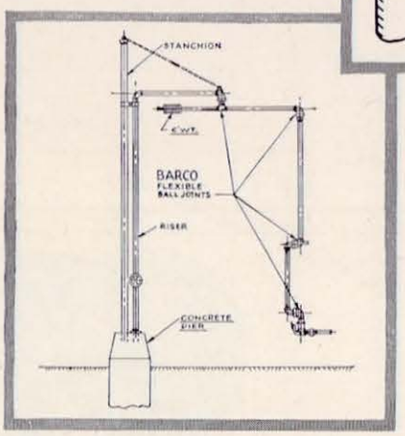
LIGHT; EASY HANDLING! Portions of the assembly handled by workmen are made of magnesium alloy, only one-fourth the weight of steel.

PERMANENT, TROUBLE-FREE! These Barco drops are permanent connections eliminating costly, troublesome replacements.

ENGINEERING RECOMMENDATIONS — Barco factory and field engineers are at your service to help you plan modern, efficient, economical fueling arrangements. Call or write today! ASK FOR BULLETIN 1150. BARCO MFG. CO., 1800D Winnemac Avenue, Chicago 40, Ill. In Canada: The Holden Co. Ltd., Montreal.

The above picture shows a new Barco Diesel Fueling Assembly of the type now being specified and installed on leading railroads. This installation, serving two tracks, is swung parallel to the tracks when not in use.





(Above) Sketch shows typical installation of Barco Fueling Assembly between tracks where it will serve either side.

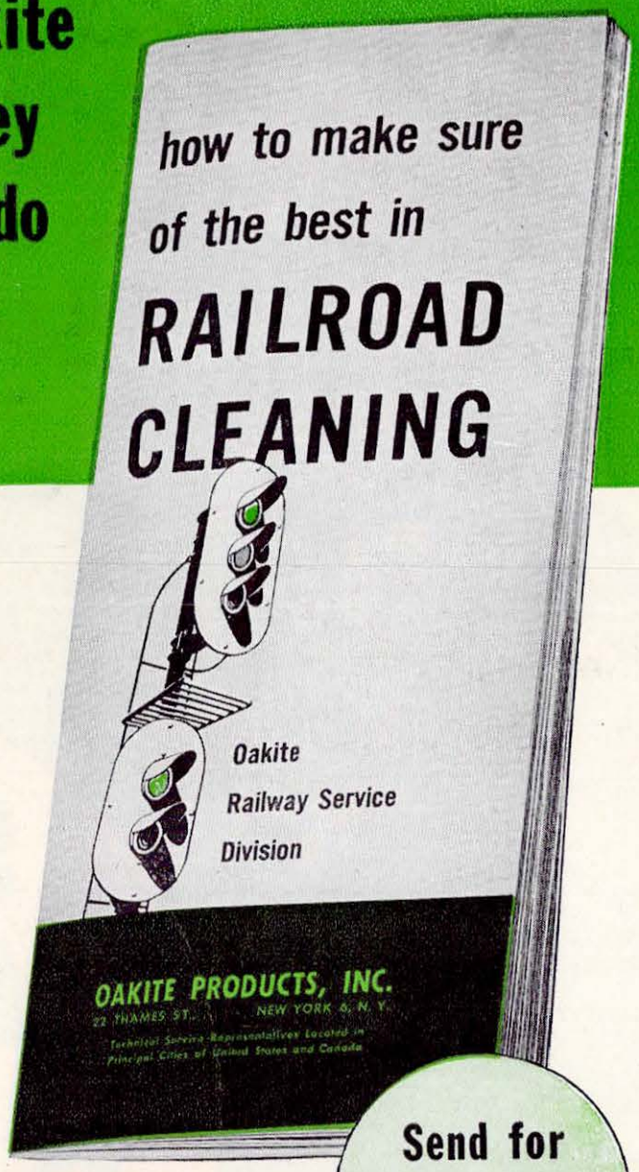
(Left) This diagram, showing the arrangement of the assembly, can be varied to meet different conditions. A simpler arrangement is available to serve only one track.

BARCO DIESEL FUELING ASSEMBLIES

The Only Truly Complete Line of Flexible Ball, Swivel, Swing, and Revolving Joints

FREE ENTERPRISE–THE CORNERSTONE OF AMERICAN PROSPERITY

Just ONE IDEA lifted from this NEW 56 page Oakite booklet can save money for your road . . . help do some maintenance job easier, faster, better



Yes, this fact-filled booklet is yours, free for the asking. Between its covers you will find usable ideas, job-tested cleaning methods and short-cuts on a wide range of maintenance, overhaul and repair. Here are the answers to new and different ways to easier, faster maintenance on steam and Diesel power. Plus a lot of helpful data on mechanical and manual methods and materials on car washing.

With the requirements of Defense Transportation presenting added problems of shorter turn-around time and of keeping equipment in efficient operating condition, this booklet comes as a timely dependable guide for those handling this work.

Data in Booklet Based on First Hand Knowledge and Successful Experience

Complete and comprehensive, everything in this informative 56 page booklet "Railroad Cleaning" is based on long, successful experience and Oakite's practical, first-hand knowledge of the work and problems associated with railroad maintenance, overhaul and repair. Mechanical Department Officers, Operating Officers and other personnel interested in greater efficiency and work-saving ideas, are invited to send for their free copy of "Railroad Cleaning".

Send for Your Copy Today

OAKITE PRODUCTS, INC., 46 Thames Street, NEW YORK 6, N. Y.
In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.

OAKITE RAILWAY SERVICE DIVISION

Setting a new standard

SHELL TALONA R OIL 40

For all diesel engines in railway service

for anti-wear performance

An advance in railroad diesel lubrication that rivals the discovery of anti-sludge compounds!

SHELL TALONA R OIL 40 combats the main causes of diesel engine wear so successfully that accepted wear standards must now be revised. *This gain is achieved without sacrifice of any basic lubricating function.*

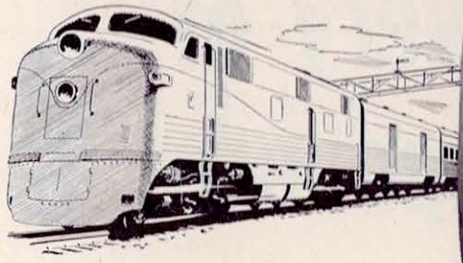
Especially favorable is the wear reduction at the critical top-cylinder zone. By maintaining original cylinder-wall and piston-ring dimensions longer, engine efficiency stays at a high level and crankcase contamination is greatly reduced.

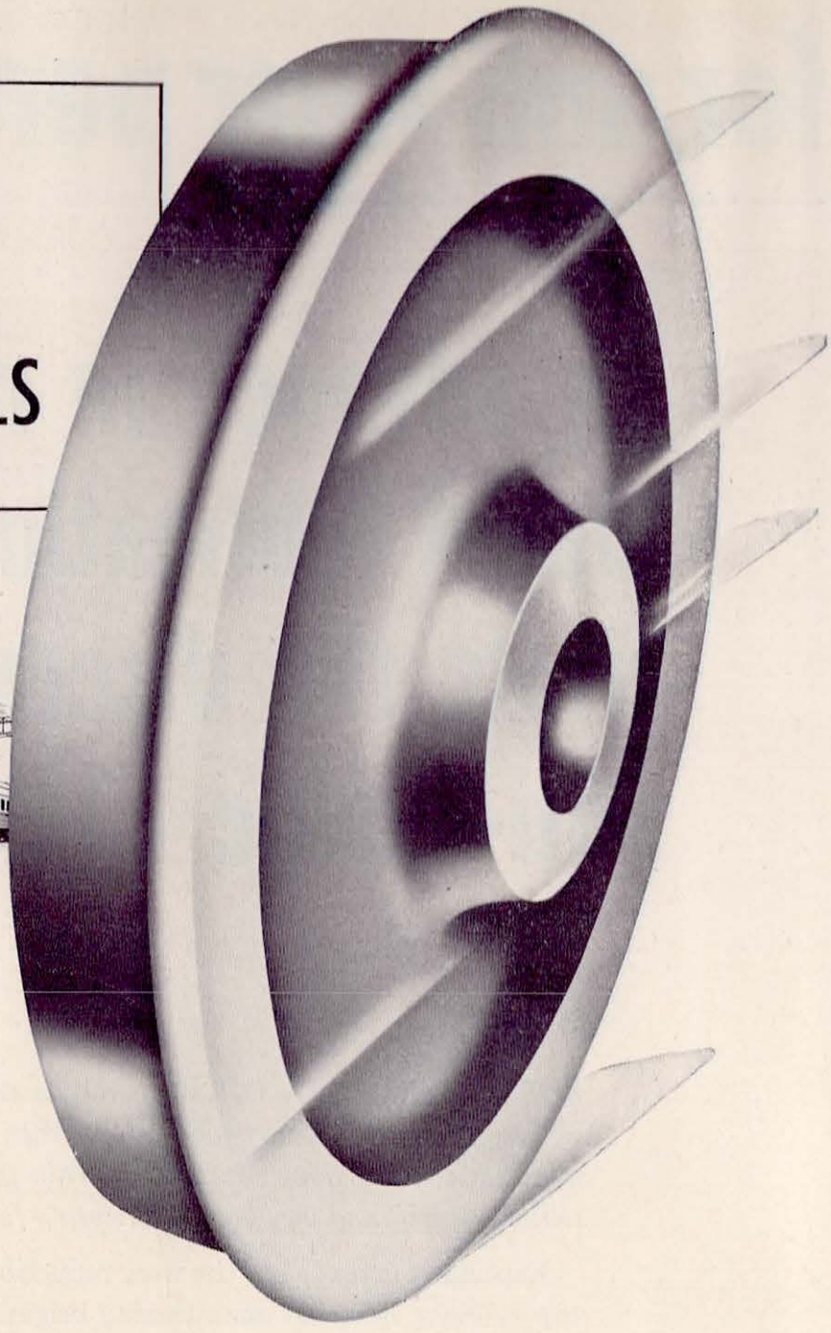
Investigate the anti-wear advantages of Shell Talona R Oil 40 for *your own* diesel units.

SHELL OIL COMPANY

50 WEST 50TH STREET, NEW YORK 20, NEW YORK
100 BUSH STREET, SAN FRANCISCO 6, CALIFORNIA
SHELL BUILDING, ST. LOUIS 3, MISSOURI

You can have confidence in ARMCO WHEELS





Today, more than ever, you want wheels that merit utmost confidence. Higher speeds mean quicker stops—and an increasing need for wheels that will withstand severe braking under passenger cars and the high and complex stresses imposed by Diesel service.

Here is why you can rely on Armco wheels. Sixteen years ago an intensive, permanent program of wheel research was set up. Since then, special laboratory tools have been developed to simulate—and even exceed—the most punishing service conditions.

For example, to study the effects of severe braking, one testing machine brakes a wrought steel wheel at 120 m.p.h. to a stop in 15 seconds, with 20,000 pounds of pressure on each brake shoe. Hundreds of such tests on wheels of different analyses and heat treatment have provided invaluable data.

This never-ending research work, along with the experience of 43 continuous years of wheel-making, is responsible for the present Armco Wrought Steel Wheel. Latest methods of quality control insure uniformity from wheel to wheel—offer you greater peace-of-mind.

It will pay you to investigate Armco Wrought Steel Wheels. Just get in touch with our nearest District Office or write us at the address below.

ARMCO STEEL CORPORATION

2122 CURTIS STREET, MIDDLETOWN, OHIO • PLANTS AND SALES OFFICES FROM COAST TO COAST • EXPORT: THE ARMCO INTERNATIONAL CORPORATION

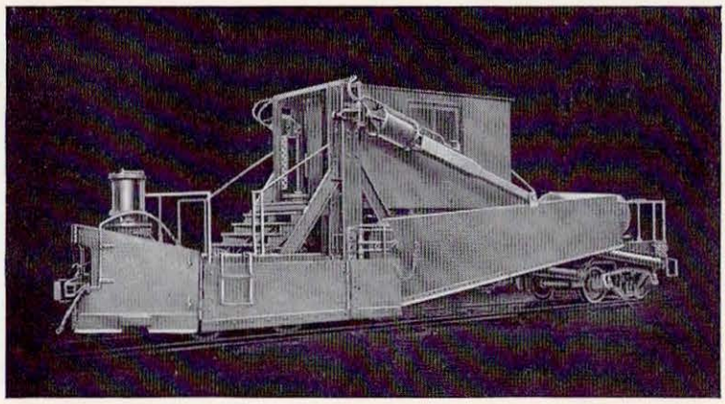
3 GOOD ANSWERS—

TO ROADBED MAINTENANCE PROBLEMS

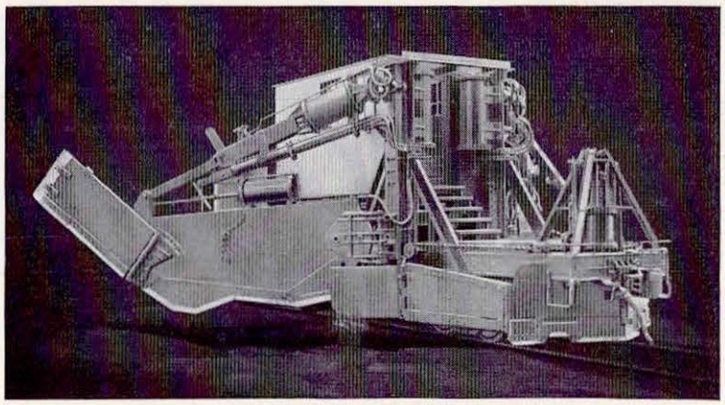
The complete Jordan spreader-ditcher-snow plow line offers you a year-around solution to every roadbed maintenance and snow removal problem: ballast plowing, roadbed shaping, ditch cutting, fill spreading, bank widening, shoulder dressing, ice cutting and track flanging.

Plan to watch a Jordan in action and you'll see why so many railroad men say, "It does the work of an army of men."

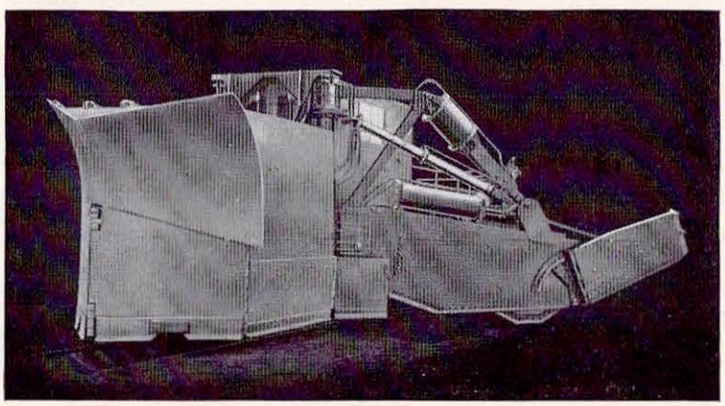
SPREADERS—



DITCHERS—



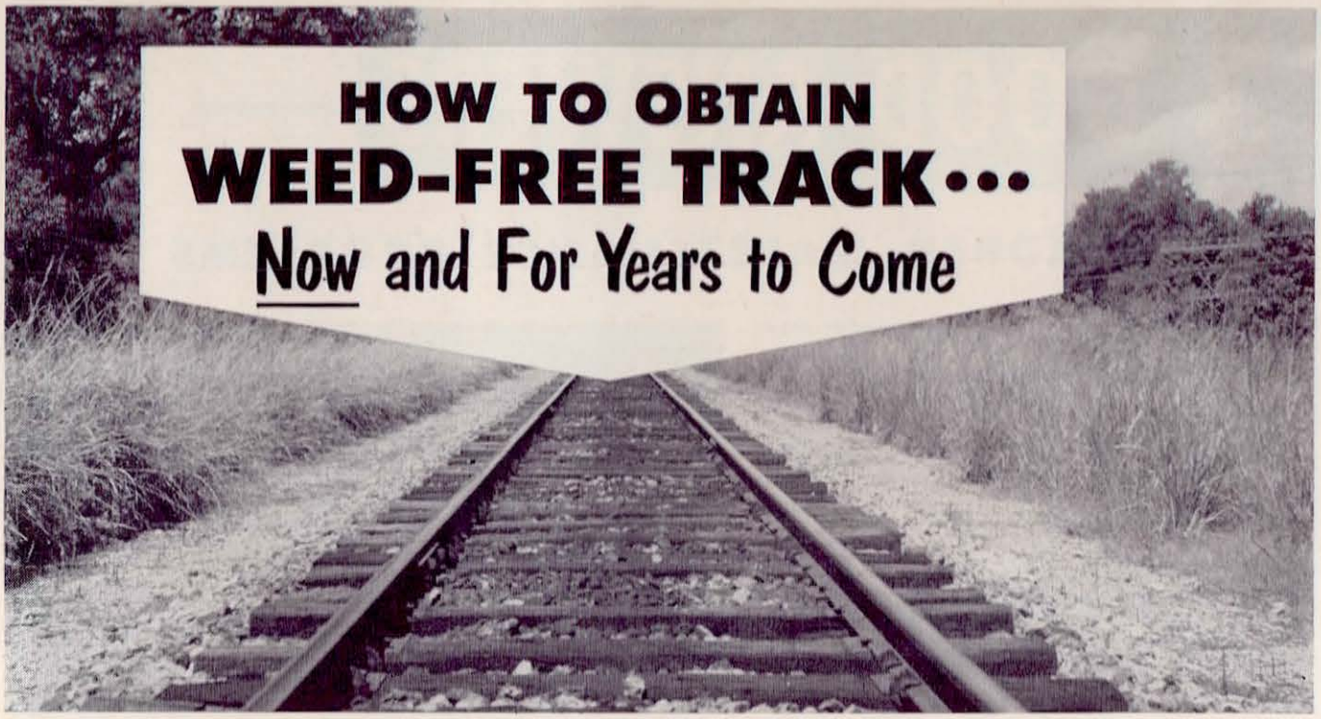
SNOW PLOWS—



O. F. JORDAN COMPANY

WALTER J. RILEY, *Chairman of the Board*

EAST CHICAGO, INDIANA



GENERAL CHEMICAL "Custom Service"

gives You √ LONG-LASTING RESULTS √ LONG-RANGE ECONOMY!

No one herbicide can be a "cure-all" for the widely varying weed problems encountered by railroads from coast-to-coast.

That's why General Chemical has developed its "Custom Service" railroad weed control program...the only method that assures weed-free track immediately...with continuous reduction in re-growth coupled with long-range economy.

General's made-to-order method is patterned to fit the particular weed problems of *your* road. Treatment is carried on under the supervision of General Chemical's weed control specialists employing modern organic herbicides which thousands of miles of track treatment have proven most effective under specific vegetative and climatic conditions.

Aimed at control of perennial root systems, this scientific method kills off long established perennials, reduces the amount of re-growth year after year, eliminates heavy seed germination, and prevents outside encroachment in subgrade. With it, you can obtain weed-free track now and for years to come at diminishing annual costs!

GENERAL CHEMICAL WEED CONTROL

Weed Killer Department

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

General Chemical "Custom Service"
employs these proven weed and brush killers!

General Chemical Formula 7 (TCA, Acid in an Oil Base)	• For general purpose grass control. • Used with one of the additives listed for over-all control of weeds.
General Chemical Formula 7 with 2, 4-D	• For use where grasses predominate, but includes sufficient 2,4-D to control moderate infestations of broad-leafed weeds.
General Chemical Formula 7 B-D	• For control of very resistant weeds and grasses. The amount of 2, 4-D has been increased and fortified by pentachlorophenol.
General Chemical Sodium TCA (Liquid Concentrate)	• For soil treatment of noxious grasses. • For all-purpose weed control when used with one of the ester additives listed.
General Chemical Emulsible PCP—Aromatic Oil	• Low cost contact type killer for use where weed and grass control problems are not severe . . . contains Pentachlorophenol
General Chemical 2, 4-D Amine Additive	• Used in conjunction with General Chemical Formula 7 for all-purpose weed and grass control.
General Chemical 2, 4-D Ester Additive	• For use with General Chemical Formula 7 or Sodium TCA where cotton or other plants susceptible to 2, 4-D are not present.

General Chemical 2, 4-D—2, 4, 5-T Ester Brush Killer (Water Soluble)

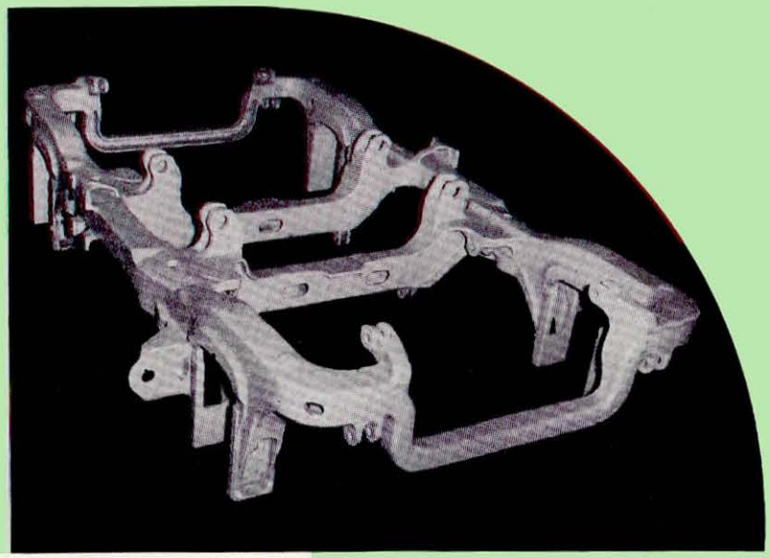
PENNSYLVANIA RAILROAD'S NEW TRAINS...

The Morning Congressional,
The Afternoon Congressional
and The Senator

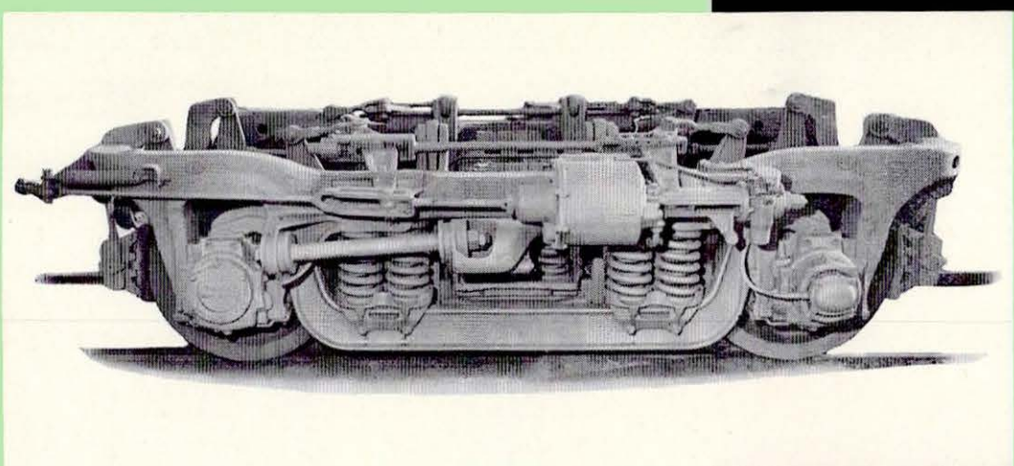
Ride on

COMMONWEALTH TRUCKS

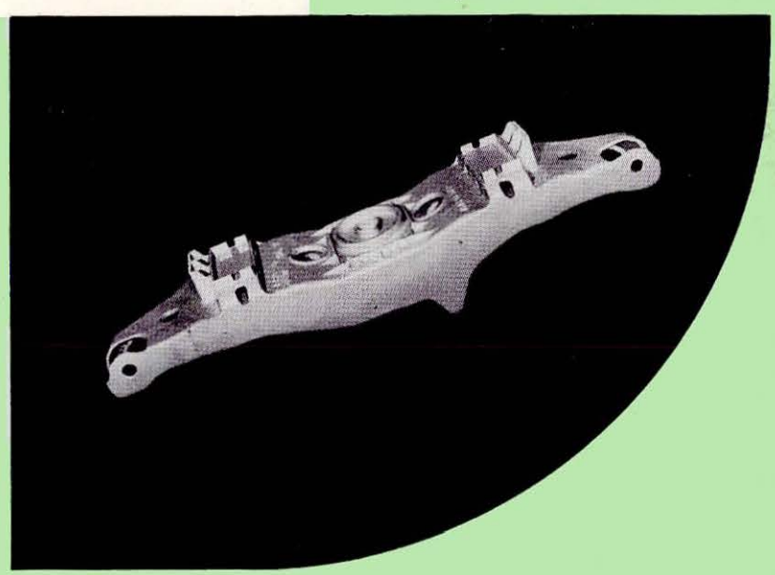
For Passenger Comfort
and Operating Economy



One-piece passenger car truck frame



One-piece truck bolster



Sixty-four new passenger cars built by the Budd Co. for the Pennsylvania Railroad "Congressionals" and "Senators," operating between Boston, New York and Washington, are equipped with safe, smooth, comfortable riding COMMONWEALTH 4-wheel passenger car trucks.

These trucks of the Pennsylvania's latest design with COMMONWEALTH one-piece cast steel frames and bolsters provide great strength and durability for safety, long service life and a minimum of maintenance expense. Their superior riding qualities assure exceptional passenger comfort.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. • EDDYSTONE, PA.

THE NEW *Congressionals and The Senator...*

NO FINER TRAINS EVER BUILT.

The Morning Congressional, The Senator and the Afternoon Congressional, newest Pennsylvania Railroad trains of Budd-built cars, comprise all that is finest — all that is most luxurious in railway transportation.

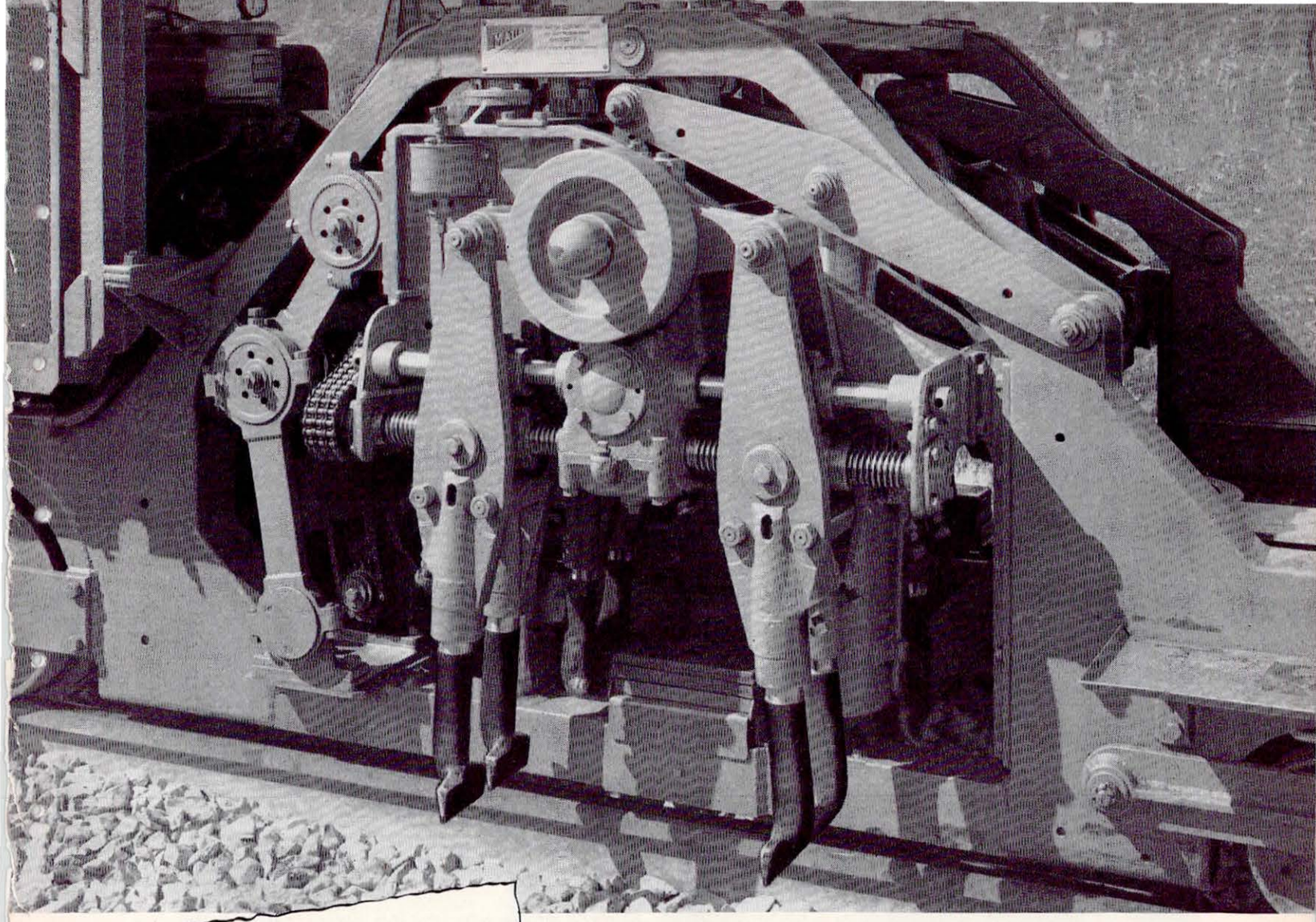
All cars on these trains are equipped with Waughmat Twin Cushions. Thanks to Twin Cushions there is no jerk when trains start, no jolt when trains stop, no jars while they are rolling. Again, Twin Cushions prove their place . . . selected for the reason that they are recognized as the world's finest car cushioning device.

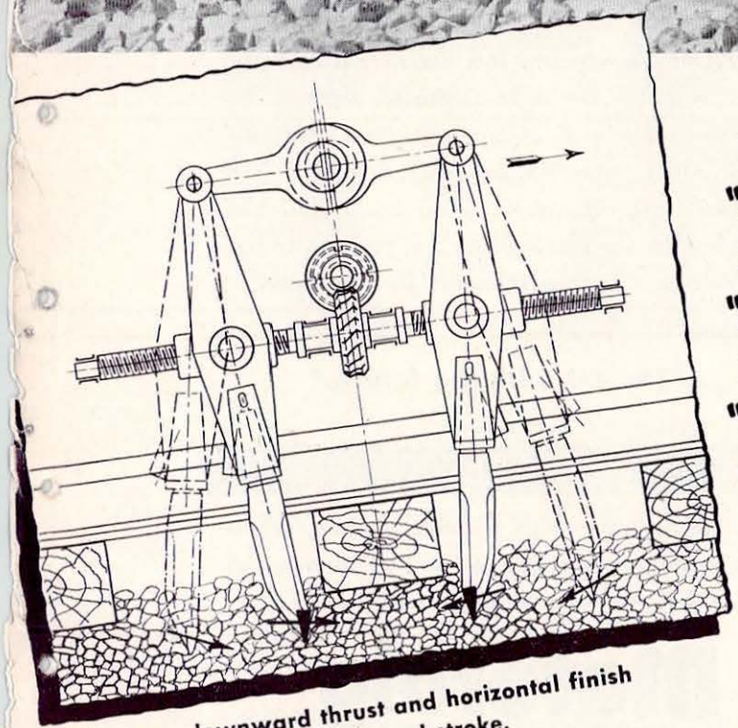
WAUGHMAT

Twin Cushions

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY, *NEW YORK, CHICAGO, ST. LOUIS* · CANADIAN WAUGH EQUIPMENT COMPANY, *MONTREAL*





Note downward thrust and horizontal finish of tamper tool stroke.

There are Three Basic Types of Mechanical Tamping:

"BRUTE FORCE" to ram ballast into place.

"PERSUASION" to urge ballast into place.

"FORCEFUL PERSUASION" which combines pressure — not pounding action — and vibration to give the uniform compaction as produced by the

Matisa TAMPER

THE MATISA EQUIPMENT CORPORATION
224 South Michigan Blvd. • Chicago 4, Illinois

ALL OVER THE WORLD Matisa TRACKWORK SPECIALISTS

FAMOUS TRADEMARKS IN RAILROADING

"Chessie" OF THE C & O

. . . and

DIXIE CUPS in the familiar blue design

Mention C & O to rail travelers . . . and they immediately think of "Chessie", one of the most famous trade marks in all railroading.

Likewise when passengers think of paper cups they just naturally think of Dixie Cups, best-known and most popular of all paper cups. For years the C & O has provided its passengers with genuine Dixie service.

The familiar Dixie Cup dispenser in the car . . . in the bedroom . . . in the roomette has been a fixture on the nation's leading railroads for over 30 years. Millions of passengers know that highest-quality Dixie Cups are always clean . . . always safe and sanitary. And millions of passengers appreciate that final touch in service genuine Dixie Cups provide.

Write to Railroad Department

DIXIE CUP COMPANY

Easton, Pa.

"Dixie" and "Vortex" are registered trade marks of the Dixie Cup Company

EXCLUSIVE DIXIE DISPENSERS

hold cup, cone-shaped or flat-bottom cups

RECESSED DISPENSER

Fits flush with bulkhead. Gleaming satin-chrome finish. Exclusive Dixie adaptors permit use of flat-bottom Dixies or cone-shaped Vortex cups, either large or small.

STREAMLINER

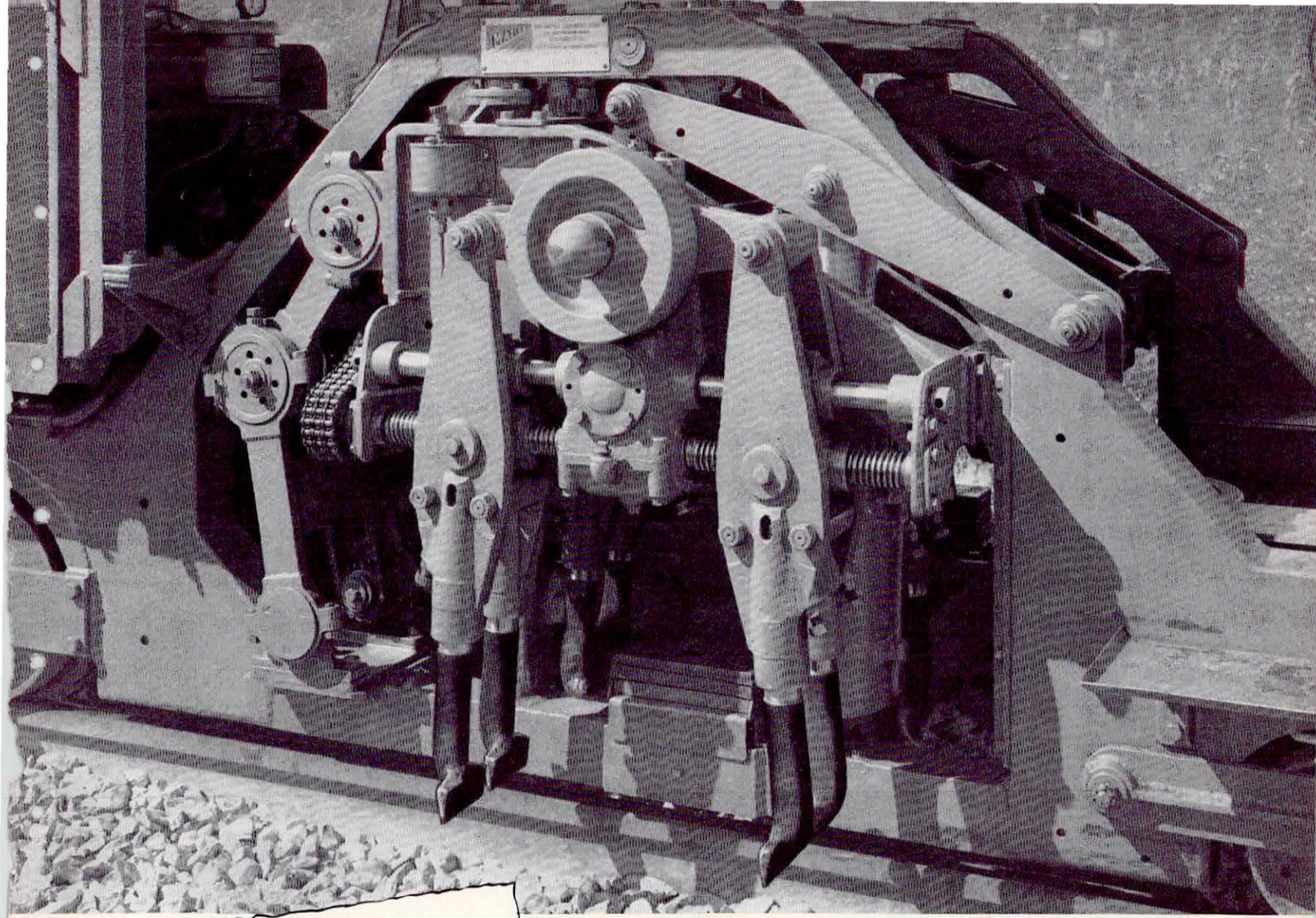
Trim, smart, easy-to-mount. Clear plastic window signals need for refill. Holds flat-bottom Dixies or cone-chaped Vortex Cups, either large or small.

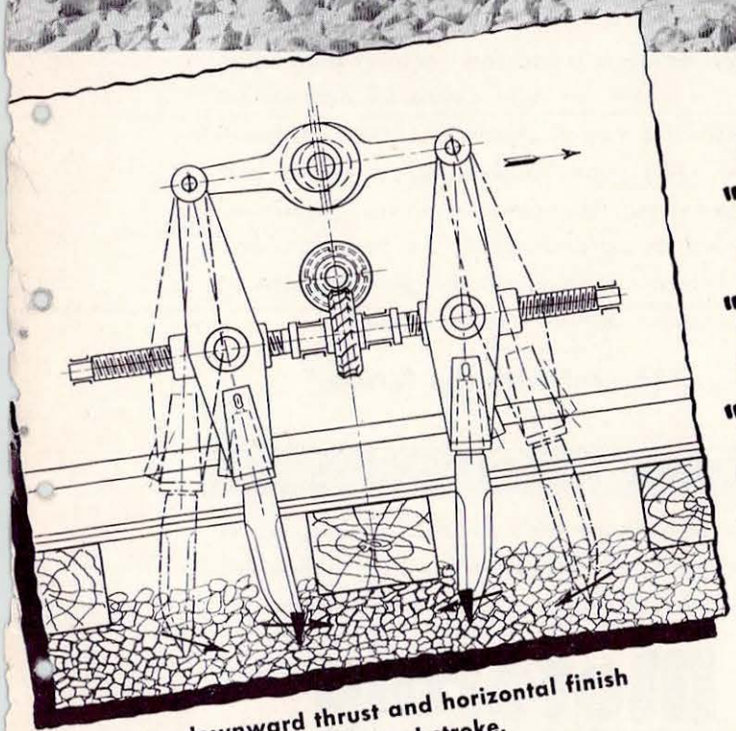
SPACE SAVER

Especially designed for use in limited space in roomette or bedroom.

Dixie Cups imprinted with your insignia, slogan, name or other message.

STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS





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Matisa TAMPER

THE MATISA EQUIPMENT CORPORATION
224 South Michigan Blvd. • Chicago 4, Illinois

ALL OVER THE WORLD Matisa TRACKWORK SPECIALISTS

Serving Seventy Industries
Better with MOTOROLA 2-WAY RADIO

ON THE BIRMINGHAM SOUTHERN

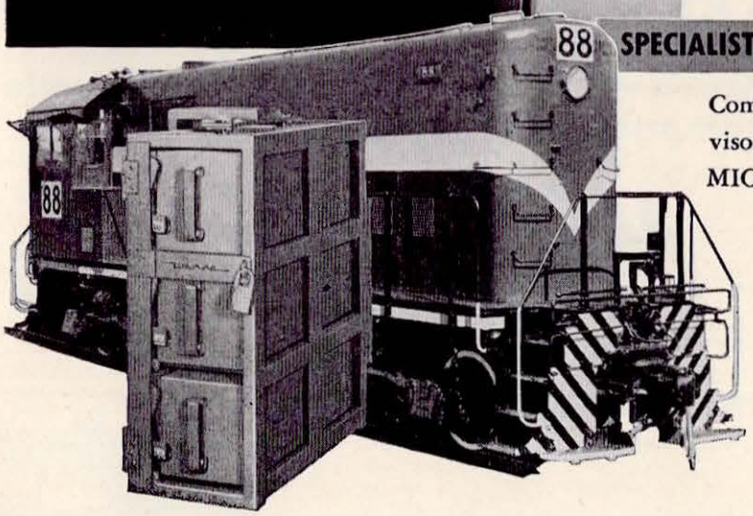
For the past two years Motorola Railroad radio has helped the Birmingham Southern render efficient, speedy service to over seventy industries.

Birmingham Southern makes full use of Motorola radio to knit their extended yard operations closely together — General Yard Master with 34th St. Yard Master, with backup position station, with shops, with roving Trainmaster's car, 19 diesels and 33 train crews.

Two Years of MOTOROLA RADIO ECONOMY

Rugged durability and low maintenance have proved Motorola the right choice for dependable railroad radio service. Motorola delivers ready-to-go-now units with "availability" to match fast diesel servicing. Motorola's "Universal" Railroad Radio assures top performance for years to come. With many exclusive advance-design, obsolescence-proof features, Motorola is truly called . . .

..."The set with the future."



SPECIALISTS IN RAILROAD RADIO COMMUNICATIONS

Complete coverage with portable, mobile, supervisor control, telemetering, AF and RF carrier, and MICRO-WAVE — the complete network!

Motorola

COMMUNICATIONS AND ELECTRONICS DIVISION
LEADERS IN MOBILE RADIO FOR 22 YEARS

4501 Augusta Blvd., Chicago 51, Illinois
In Canada: **Rogers Majestic Electronics, Ltd., Toronto, Canada**

MULTI-VENT PANELS

Reg. U. S. Pat. Off.

Low Velocity Air Diffusion

Multi-Vent panels in the ceiling of one of the many luxurious lounge sections of the **Senator.** All the drawing rooms are equipped with Multi-Vent Room-Master panels with individual air volume control.

in the new *Congressionals* and *Senators*

The Pennsylvania Railroad and The Budd Company deserve the highest praise for the superb comfort and luxury features incorporated into the 64 new passenger cars on the famed *Congressionals* and *Senators.* Since only the finest equipment available for the maximum comfort and safety of the passenger was considered . . . it is natural that Multi-Vent was selected for air diffusion throughout.

With Multi-Vent panels both the Railroad and the Car Builder were assured of perfectly uniform car temperatures with a complete absence of drafts, stale air pockets, and the sound of rushing air . . . the major sources of passenger air conditioning complaints.

In addition to Multi-Vent's unique pressure displacement low velocity method of distributing air and to its radiant panel heating and cooling effect, the distribution plates of the Multi-Vent panel form an integral part of the car interior, furnishing a smooth attractive uninterrupted surface, free from protruding outlets. As an added advantage these perforated overhead areas help to dampen train noises.

SINCE 1897

THE PYLE-NATIONAL COMPANY 1356 NORTH KOSTNER AVENUE CHICAGO 51, ILLINOIS

BRANCH OFFICES and AGENTS in the Principal Cities of the United States and Canada. EXPORT DEPARTMENT: International Railways Supply Company, 30 Church St., New York. CANADIAN AGENT: The Holden Company, Ltd., Montreal.

LOCOMOTIVE HEADLIGHTS • GYRALITES • ANCHORLITES • TURBO-GENERATORS • FLOODLIGHTS • PLUGS AND RECEPTACLES • CONDUIT FITTINGS

FAMOUS TRADEMARKS IN RAILROADING

"Chessie" OF THE C & O

. . . and

DIXIE CUPS in the familiar blue design

Mention C & O to rail travelers . . . and they immediately think of "Chessie", one of the most famous trade marks in all railroading.

Likewise when passengers think of paper cups they just naturally think of Dixie Cups, best-known and most popular of all paper cups. For years the C & O has provided its passengers with genuine Dixie service.

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Easton, Pa.

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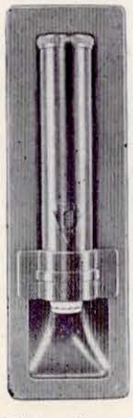
EXCLUSIVE DIXIE DISPENSERS

hold cup, cone-shaped or flat-bottom cups



RECESSED DISPENSER

Fits flush with bulkhead. Gleaming satin-chrome finish. Exclusive Dixie adaptors permit use of flat-bottom Dixies or cone-shaped Vortex cups, either large or small.

STREAMLINER

Trim, smart, easy-to-mount. Clear plastic window signals need for refill. Holds flat-bottom Dixies or cone-chaped Vortex Cups, either large or small.

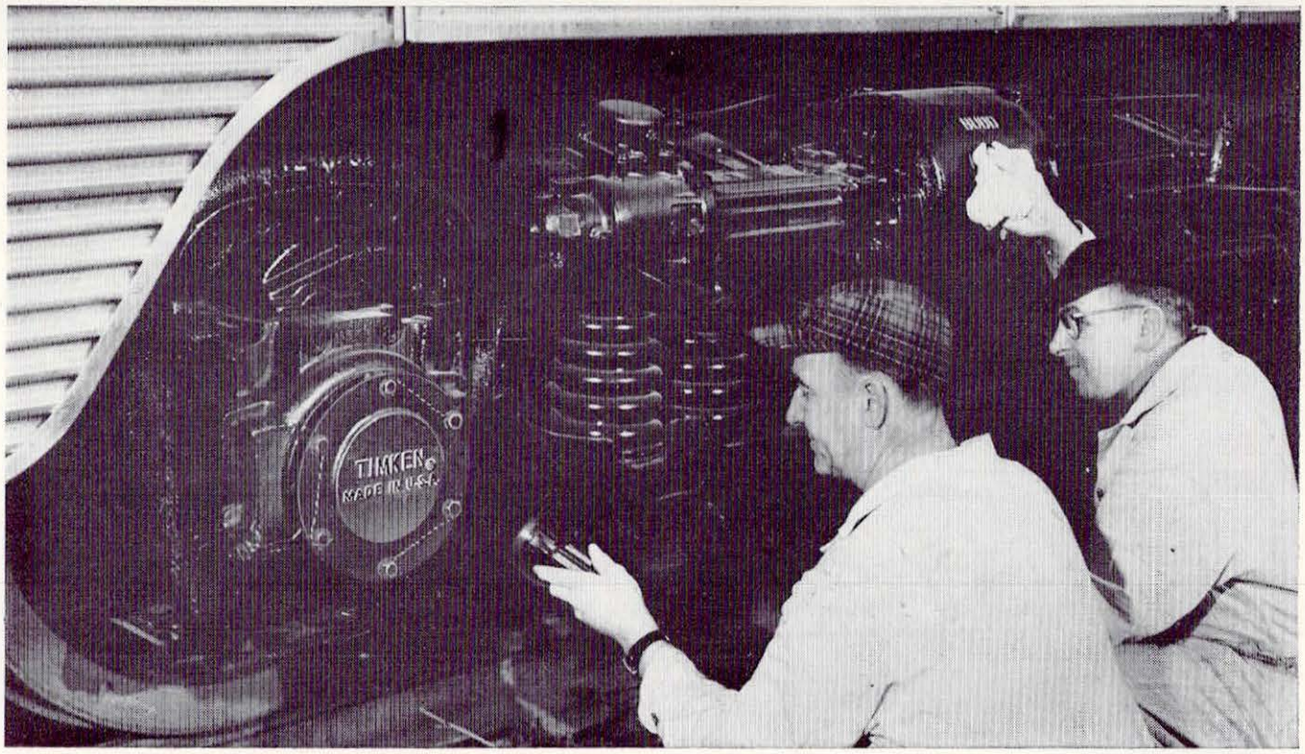
SPACE SAVER

Especially designed for use in limited space in roomette or bedroom.

Dixie Cups imprinted with your insignia, slogan, name or other message.

STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS

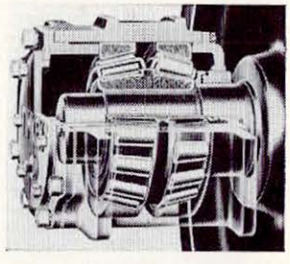
New Congressionals and Senators roll on TIMKEN® bearings!



THE PENNSYLVANIA RAILROAD has just put into service The Morning Congressional and The Afternoon Congressional between Washington-New York and The Senators between Washington-New York-Boston. These completely modern trains are the last word in luxury for busy people traveling the famous Boston-New York-Washington run. The Congressional, for example, has an all-drawing-room car—the first of its kind—containing seven spacious drawing rooms, each accommodating five people.

All 64 cars, built by The Budd Company for these four trains, use Timken® tapered roller bearings on the axles. Timken bearings cut starting resistance 88%, permit jolt-free starts and stops, cut maintenance costs, reduce lubrication bills.

Today more than 6000 passenger cars, 7000 steam and diesel locomotives, 4000 freight cars and 3000 heavy industrial cars roll on Timken tapered roller bearings. There's no other bearing with so much to offer! No other bearing so fully proved! The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".



Typical application of Timken bearings on passenger cars

TIMKEN *TAPERED ROLLER BEARINGS*

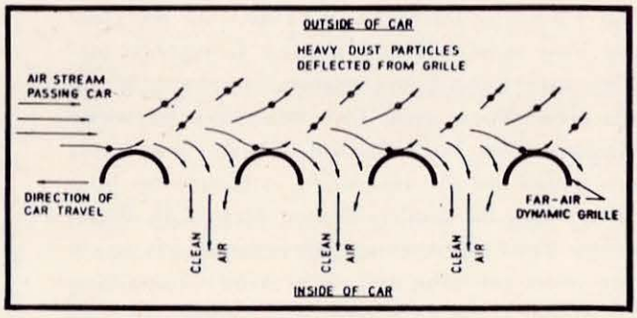
TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION

FAR-AIR* DYNAMIC GRILLE

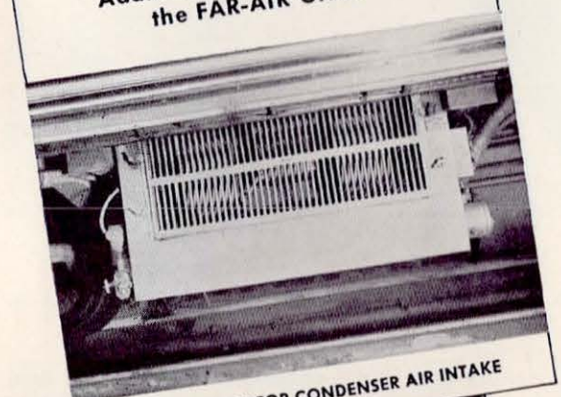
...A Practical Way to Reduce Dirt and Snow Loads in Air Filtering Systems!

The Far-Air Dynamic Grille was developed by Farr Engineers to eliminate the foreign particles from air induction systems on moving equipment. The efficiency depends on the speed of the locomotive—the higher the speed the more efficiently the grille performs. As shown in the accompanying diagram, the louvres in the grille effectively buff off foreign particles such as dirt and snow without interfering with air requirements. This virtually eliminates dirt and snow clogging the face of filters or impairing the operation of other equipment.

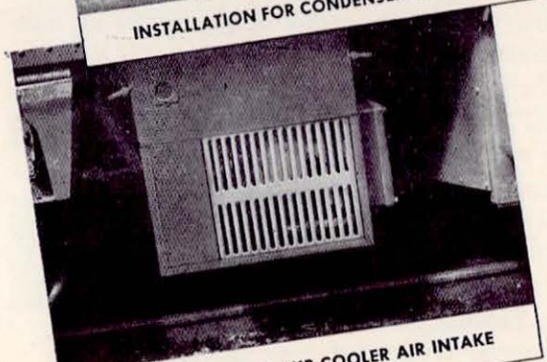


Far-Air Dynamic Grilles are practical for a number of applications and can be furnished in a variety of sizes. Qualified field engineers are available to discuss your particular requirement. Write today for complete data on the Dynamic Grille and other railroad products. Farr Company, P.O. Box 10187 Airport Station, Los Angeles 45, California.

Additional Applications for the FAR-AIR Grille



INSTALLATION FOR CONDENSER AIR INTAKE



INSTALLATION FOR SUB-COOLER AIR INTAKE

*Trade Mark Reg.

FARR COMPANY *Manufacturing Engineers*

Los Angeles • Chicago • New York

Mf'd under license by Control Equipment Co., Ltd., Montreal, Canada.

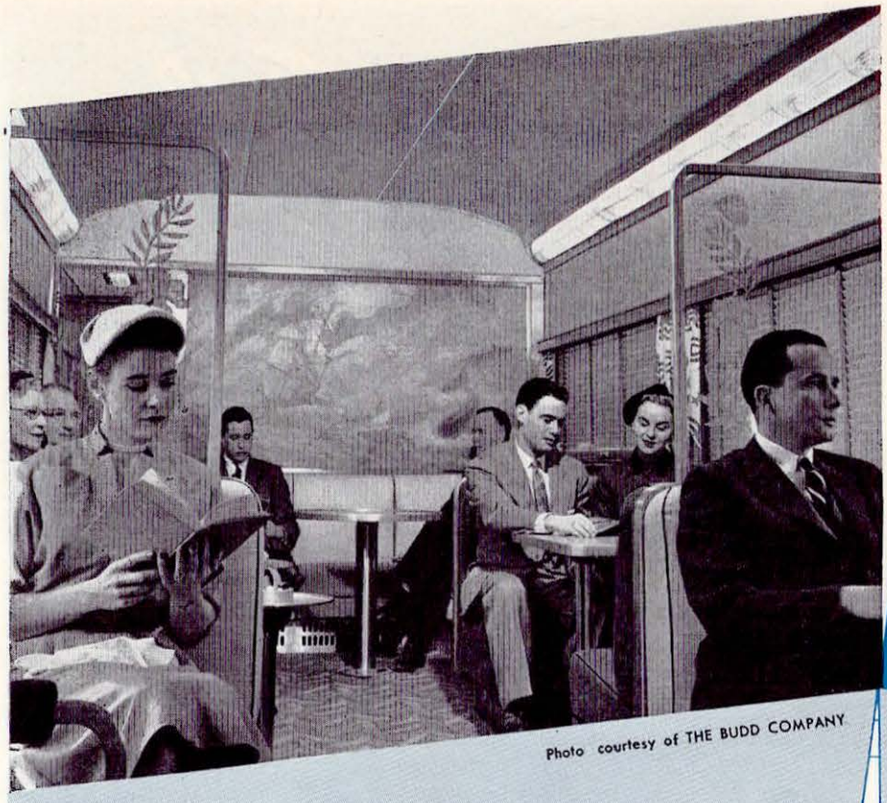


Photo courtesy of THE BUDD COMPANY

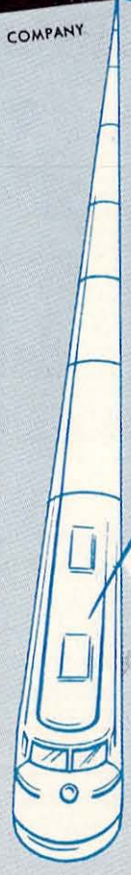
PENNSYLVANIA'S NEW "SENATOR" AND "CONGRESSIONAL" SAY *Welcome*

...WITH LIGHTING BY LUMINATOR

Science aims to inform while art aims to please. To create the lighting results in the new "Senator" and "Congressional," built by The Budd Company, Luminator design engineers applied an extensive background in the Science of Seeing as well as a thorough training in art.

For the Parlor Observation Lounge Car shown above, built-in fluorescent cornice lighting utilizing continuous lensed glassware, is used to control the high intensity light beams to the reading, writing and card-table areas. Soft diffused light for general illumination is provided by the enameled portion of the glassware.

By the use of prisms, lenses and diffusing enamel, glare and brightness are reduced to a comfortable degree. The controlled high intensity light increases the speed of vision, thus preventing blur when passengers are reading.



LUMINATOR'S LIGHTING specialists are qualified to engineer and design lighting for every job. Whatever your transportation lighting needs . . . LOOK TO LUMINATOR!

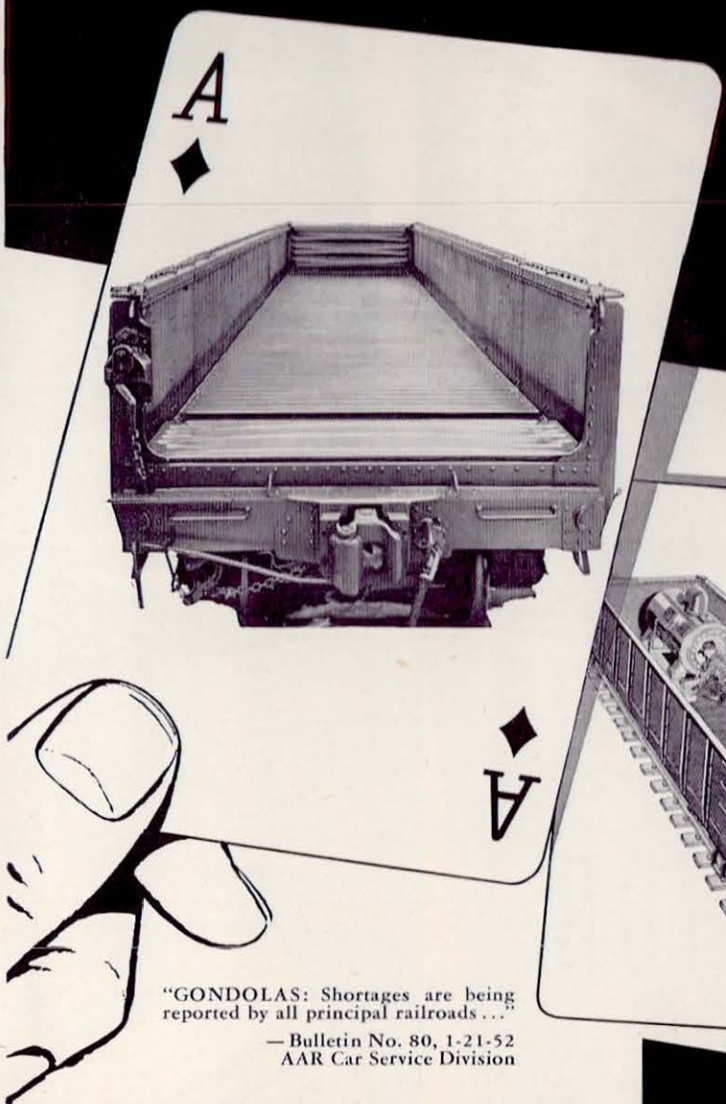
LIGHTING ENGINEERS • DESIGNERS • MANUFACTURERS

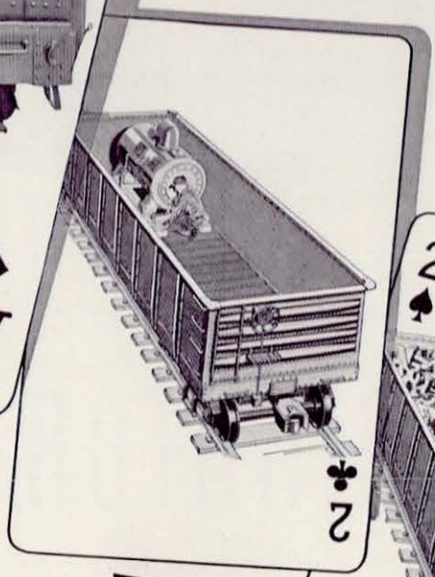
LUMINATOR inc.

120 NORTH PEORIA ST., CHICAGO 80, ILLINOIS

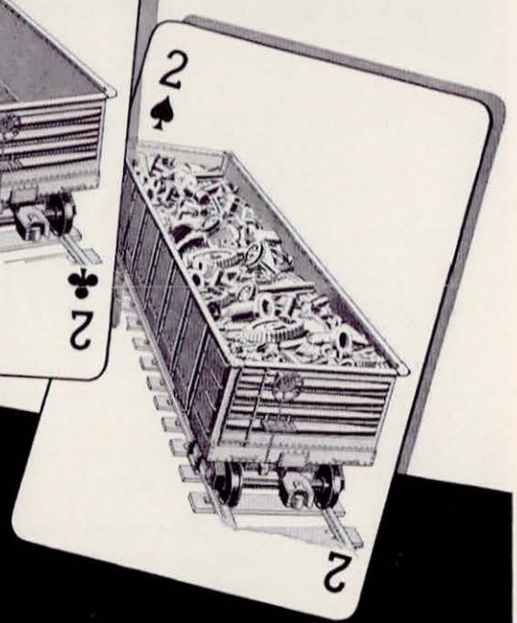
IN CANADA: RAILWAY AND POWER ENGINEERING CORP.

This Time... An Ace beats a Pair!





Inbound gondola carrying scrap may have a steel plate floor to which *outbound* finished freight cannot be blocked. Result: a *second* car with a different type flooring is often needed.



"GONDOLAS: Shortages are being reported by all principal railroads..."
— Bulletin No. 80, 1-21-52
AAR Car Service Division

Gondolas equipped with NAILABLE STEEL FLOORING do double duty. Floored with steel, yet nailable . . . they can deliver rough freight and carry away finished freight which must be blocked. Less switching and deadheading of empties reduce operating costs—improve car supply.

Formed of tough N-A-X HIGH-TENSILE steel, N-S-F takes nails easily without damage to the floor . . . provides security for blocked and skidded loads . . . assures extra revenue years of service.

Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco and Montreal.

GREAT LAKES STEEL CORPORATION
Steel Floor Division • Ecorse, Detroit 29, Michigan

PRODUCER OF N-A-X HIGH-TENSILE STEEL

NATIONAL STEEL CORPORATION

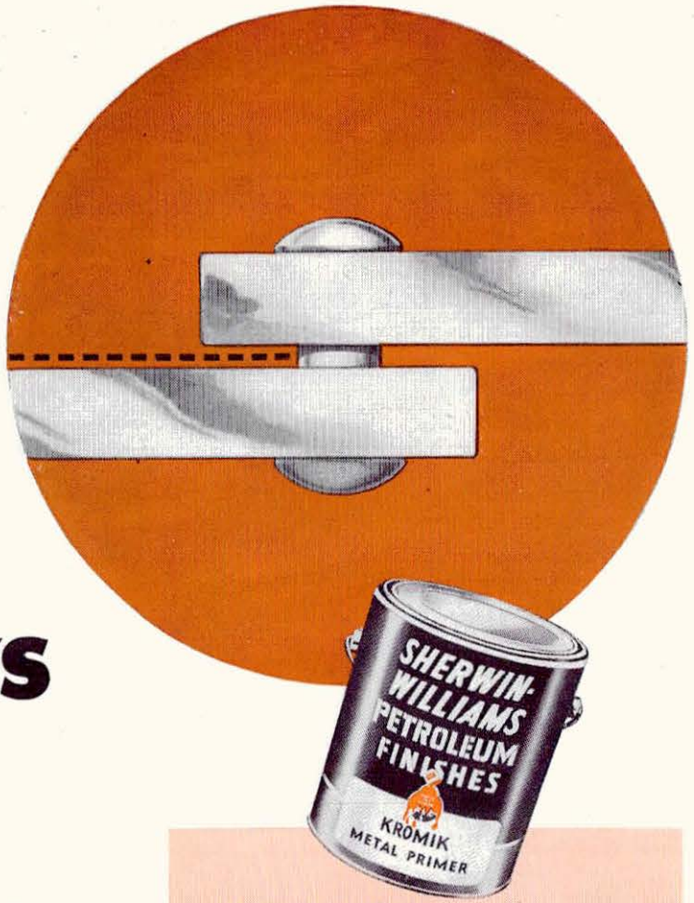
PATENTS PENDING 52-SF-2

Why Use Two when One Will Do?

PENETRATES---

cracks...joints...rivet holes

TO PROTECT METAL 4 WAYS



Rust and corrosion find weak spots in a priming film *fast,* in railway service.

That's why KROMIK® has proved such an outstanding, standard priming material, not only in the railway industry, but in petroleum, marine and structural steel service, for year after year after year.

KROMIK outperforms single-pigment primers because, for one reason, it is formulated to *penetrate* into joints and rivet holes . . . to cover evenly, whether brushed or sprayed, avoiding the weak spots that occur with heavy-pigmentation primers that leave "valleys" when brushed. KROMIK dries through, forming a tough, tight film that withstands weather and abrasion . . . lends itself well to application of aluminum paint and either dark or light-colored finishing coats.

Ask for proof. Check your Sherwin-Williams representative or write The Sherwin-Williams Co., 101 Prospect Avenue, Cleveland 1, Ohio.

KROMIK

the 4-pigment primer

1 PREVENTS RUST

KROMIK incorporates the best protective properties of *red lead* to resist moisture —stop rust before it starts.

2 INHIBITS CORROSION

Zinc chromate—another protective pigment —adds extra resistance against corrosion.

3 RESISTS ABRASION

Zinc oxide aids drying and hardness— makes KROMIK equal to most top coats in toughness and resistance to abrasion.

4 WITHSTANDS WEATHER

Iron oxide enables KROMIK to withstand sun and weather even if exposed for long periods before top coats are applied.

COVER THE EARTH

SHERWIN-WILLIAMS

RAILWAY FINISHES

Freight Operating Statistics of Large Railways — Selected

	Region, Road and Year		Miles of road operated	Locomotive-Miles: Train-miles	Locomotive-Miles: Principal and helper	Locomotive-Miles: Light	Car-Miles: Loaded (thousands)	Car-Miles: Per cent loaded	Ton-miles (thousands): Gross excl.locos & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: Per cent B.O.
New Eng. Region	Boston & Maine	1951	1,690	263,907	271,258	12,432	9,448	69.8	602,480	257,972	84	3	14	13.9
		1950	1,691	271,622	279,180	11,709	10,447	72.3	632,440	268,941	91	6	5	4.9
	N. Y., N. H. & Htfd	1951	1,765	288,837	289,072	23,944	10,456	68.8	670,353	295,598	91	..	4	4.2
		1950	1,766	294,500	294,985	24,818	11,338	70.8	726,009	331,540	104	..	9	8.0
Great Lakes Region	Delaware & Hudson	1951	793	244,499	281,436	21,299	10,435	71.5	735,039	400,122	103	20	30	19.6
		1950	793	259,199	301,634	22,140	11,433	73.2	786,728	429,334	149	36	36	16.3
	Del., Lack. & Western	1951	954	272,569	292,666	31,003	11,852	69.6	788,828	363,165	80	5	7	7.6
		1950	966	293,690	320,979	32,371	12,894	70.2	832,539	376,206	77	2	46	36.8
	Erie	1951	2,242	593,904	601,979	31,370	31,468	66.0	2,044,621	858,564	169	11	15	7.7
		1950	2,245	669,227	683,779	44,696	34,891	69.7	2,156,452	908,898	192	7	31	13.5
	Grand Trunk Western	1951	952	257,685	264,114	2,171	8,173	63.7	565,367	246,139	53	..	14	20.9
		1950	974	271,071	278,846	3,412	9,484	66.0	632,958	272,485	59	..	15	20.3
	Lehigh Valley	1951	1,207	242,463	250,221	15,363	11,911	69.3	765,035	352,758	38	5	5	10.4
		1950	1,216	246,312	256,766	27,725	12,377	73.4	797,218	384,716	54	..	11	16.9
	New York Central	1951	10,675	2,842,573	2,993,039	156,128	101,408	62.3	7,314,025	3,344,296	878	90	339	25.9
		1950	10,691	3,253,145	3,437,385	198,794	111,958	64.7	7,948,071	3,712,767	1,007	13	369	26.6
	New York, Chic. & St. L.	1951	2,161	794,641	813,070	9,959	28,772	64.7	2,037,772	907,966	214	8	36	14.0
		1950	2,162	864,744	882,518	14,775	31,650	67.2	2,124,412	967,021	211	2	33	13.4
	Pitts. & Lake Erie	1951	221	83,153	86,082	312	3,513	63.4	294,644	176,960	34	3	14	27.5
		1950	221	93,613	98,157	194	4,228	66.7	361,401	221,505	29	..	12	29.3
	Wabash	1951	2,381	493,249	501,374	7,702	20,158	70.0	1,294,732	566,723	114	17	30	18.6
		1950	2,381	580,696	589,838	10,120	24,556	72.4	1,511,374	658,878	141	6	75	33.8
Central Eastern Region	Baltimore & Ohio	1951	6,082	1,706,328	1,976,937	218,302	64,483	61.8	4,851,113	2,396,731	607	47	192	22.7
		1950	6,083	1,902,663	2,263,283	248,255	69,837	65.4	5,032,267	2,469,010	716	34	218	22.5
	Central of New Jersey	1951	412	73,270	73,696	3,133	2,632	66.5	196,676	104,130	38	1	4	9.3
		1950	410	75,655	75,655	4,178	2,742	67.2	199,487	103,286	39	..	6	13.3
	Central of Pennsylvania	1951	208	66,370	71,386	10,581	2,575	69.4	190,228	104,202	32	3	6	14.6
		1950	210	72,508	79,798	12,793	2,786	72.5	200,422	110,926	36	2	15	28.3
	Chicago & Eastern Ill.	1951	868	128,238	128,238	2,800	4,634	68.3	314,987	156,859	27	..	1	3.6
		1950	886	126,403	126,403	2,605	5,075	71.1	327,950	161,204	25	..	2	7.4
	Elgin, Joliet & Eastern	1951	238	93,921	95,183	42	3,308	66.4	262,175	145,092	43	..	1	2.3
		1950	238	89,468	92,556	136	3,249	68.8	246,169	135,167	40	..	1	2.4
	Pennsylvania System	1951	10,033	3,054,992	3,304,925	342,065	119,896	63.6	8,681,429	4,145,366	1,108	104	370	23.4
		1950	10,036	3,096,922	3,426,543	374,429	131,994	69.4	8,925,643	4,392,127	1,247	..	325	20.7
	Reading	1951	1,321	399,295	409,722	25,790	14,374	65.3	1,149,821	637,168	186	20	43	17.3
		1950	1,315	386,413	399,938	29,179	14,770	66.7	1,141,839	628,544	178	12	27	12.4
	Western Maryland	1951	837	195,750	232,471	27,655	6,790	61.6	570,058	318,076	128	3	20	13.2
		1950	837	198,315	237,901	29,004	7,254	63.8	595,586	332,580	148	21	13	7.1
Pocahontas Region	Chesapeake & Ohio	1951	5,043	1,477,071	1,551,548	69,054	62,100	55.5	5,549,400	3,087,547	487	2	238	32.7
		1950	5,042	1,541,780	1,617,325	66,985	61,969	59.5	5,165,523	2,874,263	555	3	210	27.3
	Norfolk & Western	1951	2,113	781,907	834,168	70,406	34,434	57.6	3,134,434	1,713,983	256	6	22	7.7
		1950	2,104	731,967	777,904	61,416	32,811	61.5	2,806,649	1,539,628	246	19	26	8.9
Southern Region	Atlantic Coast Line	1951	5,436	854,767	855,501	13,268	24,973	57.2	1,873,832	839,614	358	25	47	10.9
		1950	5,432	852,220	878,111	14,236	27,034	61.8	1,901,833	862,803	343	..	93	21.3
	Central of Georgia	1951	1,765	243,012	245,700	4,343	7,268	66.4	498,561	229,572	92	6	7	6.7
		1950	1,783	292,214	295,771	4,902	8,035	71.3	523,618	246,538	99	..	10	9.2
	Gulf, Mobile & Ohio	1951	2,851	323,033	323,033	204	15,751	70.2	1,033,568	490,217	83	..	3	3.5
		1950	2,851	340,549	340,549	217	16,880	74.4	1,078,973	515,649	81	..	2	2.4
	Illinois Central	1951	6,539	1,635,904	1,644,138	57,039	52,810	61.7	3,917,236	1,818,515	580	3	79	11.9
		1950	6,539	1,620,371	1,626,346	57,413	55,755	65.2	3,985,239	1,885,419	594	..	66	10.0
	Louisville & Nashville	1951	4,756	1,091,406	1,157,549	30,256	35,235	61.8	2,644,289	1,323,343	310	23	56	14.4
		1950	4,769	1,190,180	1,272,195	35,536	36,974	65.5	2,665,278	1,354,021	317	10	109	25.0
	Nash., Chatt. & St. Louis	1951	1,032	213,600	217,668	3,790	6,734	70.4	441,557	208,730	47	..	4	7.8
		1950	1,049	230,941	234,488	3,889	6,791	75.4	426,483	206,217	74	..	16	17.8
	Seaboard Air Line	1951	4,135	739,207	761,208	2,043	25,374	63.1	1,812,079	802,502	206	59	11	4.0
		1950	4,136	769,979	804,751	3,386	25,666	65.6	1,786,168	810,997	254	5	49	15.9
	Southern	1951	6,264	1,158,611	1,159,424	12,707	40,241	66.2	2,672,947	1,207,344	350	44	78	16.5
		1950	6,302	1,265,911	1,273,928	15,974	43,132	70.7	2,702,114	1,228,968	377	12	171	30.5
Northwestern Region	Chicago & North Western	1951	7,889	796,956	804,523	19,625	28,133	67.8	1,936,611	914,323	292	17	131	29.8
		1950	7,920	868,916	883,707	24,936	30,920	69.6	2,102,214	973,980	314	6	119	27.1
	Chicago Great Western	1951	1,441	139,515	139,751	15,631	7,335	69.2	514,337	248,126	31	..	3	8.8
		1950	1,441	150,151	150,505	11,006	8,839	72.0	573,688	265,607	34	..	1	2.9
	Chic., Milw., St. P. & Pac.	1951	10,663	1,127,275	1,160,729	45,705	42,176	65.9	2,863,789	1,316,332	385	65	79	14.9
		1950	10,663	1,255,332	1,299,552	49,993	47,803	70.5	3,098,813	1,456,626	442	60	84	14.3
	Chic., St. P., Minn. & Omaha	1951	1,606	214,026	219,867	10,519	5,623	65.3	404,685	191,038	70	..	37	34.6
		1950	1,606	203,726	212,135	10,804	5,535	70.0	371,240	168,467	74	..	24	24.5
	Duluth, Missabe & Iron Range	1951	567	57,872	58,224	899	1,467	56.3	130,596	70,044	33	16	26	34.7
		1950	564	41,547	41,641	968	920	52.6	74,041	39,198	19	20	20	33.9
	Great Northern	1951	8,307	1,036,188	1,037,577	42,431	35,588	68.5	2,475,025	1,166,457	316	124	72	14.1
		1950	8,220	1,103,840	1,105,604	54,801	41,294	72.6	2,753,589	1,333,127	369	87	53	10.4
	Minneap., St. P. & S. Ste. M.	1951	4,173	391,398	394,956	3,595	11,560	65.3	791,229	375,888	109	..	11	9.2
		1950	4,179	401,079	409,202	6,835	12,528	72.5	791,329	385,206	112	..	17	13.2
	Northern Pacific	1951	6,591	804,660	834,764	39,879	28,839	69.1	2,025,117	952,267	332	12	67	16.3
		1950	6,609	837,114	875,758	43,370	31,715	71.3	2,156,426	1,033,445	335	17	58	14.1
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1951	13,096	2,601,569	2,689,311	103,049	104,025	64.6	7,133,252	2,827,960	579	45	159	20.3
		1950	13,074	2,775,440	2,907,145	108,418	112,702	66.1	7,446,143	2,890,027	674	33	149	17.4
	Chic., Burl. & Quincy	1951	8,800	1,187,424	1,202,507	47,552	47,410	65.6	3,288,707	1,515,717	374	29	110	21.4
		1950	8,796	1,265,469	1,289,563	54,446	53,306	70.0	3,557,410	1,681,616	392	22	137	24.9
	Chic., Rock I. & Pac.	1951	7,902	1,017,901	1,031,431	22,379	35,898	62.7	2,610,556	1,124,103	250	6	45	15.0
		1950	7,579	1,102,510	1,131,557	21,561	43,541	68.1	2,862,454	1,311,182	241	24	67	20.2
	Denver & R. G. Wn.	1951	2,333	335,785	370,260	44,015	13,960	70.3	966,122	469,702	116	14	29	18.2
		1950	2,387	331,832	366,112	41,742	13,502	69.4	926,268	453,934	110	31	34	19.4
	Southern Pacific	1951	8,082	1,931,081	2,026,161	248,920	82,315	68.6	5,351,292	2,232,195	628	17	173	21.1
		1950	8,054	2,052,770	2,160,698	292,027	91,513	71.0	5,831,963	2,500,083	763	4	135	15.0
	Union Pacific	1951	9,867	2,592,240	2,696,507	192,724	102,365	66.2	6,976,046	3,118,230	637	23	145	18.0
		1950	9,720	2,437,130	2,534,044	180,740	103,901	69.3	6,833,519	3,001,252	626	55	118	14.8
	Western Pacific	1951	1,190	235,979	240,170	19,377	11,188	70.5	725,438	331,868	36	14	20	28.6
		1950	1,192	239,540	247,125	26,283	11,096	72.6	708,706	312,566	48	11	34	36.6
Southwestern Region	International-Gt. Northern*	1951	1,104	187,349	187,349	188	6,466	64.0	468,818	216,529	50	1	14	21.5
		1950	1,089	195,764	195,992	673	6,763	67.7	476,777	208,985	55	5	6	9.1
	Kansas City Southern	1951	886	178,922	179,042	346	8,903	66.7	626,590	293,403	25	4	10	25.6
		1950	886	179,818	182,410	2,038	9,495	69.4	631,225	292,940	32	5	21	36.2
	Mo.-Kans.-Texas Lines	1951	3,230	406,746	408,114	5,534	14,744	65.7	970,094	413,133	86	19	13	11.0
		1950	3,231	426,149	428,461	6,472	15,484	66.9	993,323	430,395	93	6	29	22.7
	Missouri Pacific*	1951	6,933	1,295,776	1,310,233	17,685	46,284	63.4	3,275,322	1,445,579	336	4	54	13.7
		1950	6,942	1,371,361	1,393,067	25,572	50,250	67.9	3,356,325	1,508,443	372	..	41	9.9
	Texas & Pacific	1951	1,843	358,521	358,521	12,939	13,928	62.3	992,761	385,601	68	13	47	36.7
		1950	1,844	380,480	380,480	12,387	14,828	64.4	1,012,675	394,345	83	2	8	8.6
	St. Louis-San Francisco	1951	4,567	661,806	666,515	6,687	22,855	63.2	1,575,140	690,753	166	61	92	28.8
		1950	4,604	705,197	716,316	8,860	24,219	67.8	1,591,568	716,715	211	68	72	20.5
	St. Louis Southw. Lines	1951	1,562	332,366	334,217	4,526	14,139	72.1	876,637	391,869	76	17	19	17.0
		1950	1,562	358,673	360,445	4,953	15,224	74.3	904,396	404,278	75	9	20	19.2
	Texas & New Orleans	1951	4,290	715,520	715,578	28,561	26,621	66.0	1,844,260	818,352	222	..	51	18.7
		1950	4,315	817,370	817,370	23,588	28,841	67.9	1,937,688	857,932	221	..	51	18.8

Items for the Month of December 1951 Compared with December 1950

Region	Region, Road and Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine 1951	1,268	8,477	9,745	2.8	36,960	2,286	979	27.3	859	45.1	4,924	16.2	97.6
	1950	1,333	9,093	10,426	3.3	36,931	2,332	992	25.7	845	45.4	5,130	15.9	98.2
	N. Y., N. H. & Htfd 1951	1,366	12,582	13,948	3.8	34,978	2,323	1,024	28.3	654	33.6	5,403	15.1	116.7
	1950	1,453	18,585	20,038	1.3	36,377	2,470	1,128	29.2	546	26.4	6,056	14.8	107.5
Great Lakes Region	Delaware & Hudson 1951	3,553	5,585	9,138	7.5	57,371	3,030	1,650	38.3	1,408	51.4	16,276	19.1	66.6
	1950	2,055	6,443	8,498	6.5	56,652	3,048	1,664	37.6	1,632	59.4	17,465	18.7	49.7
	Del., Lack. & Western 1951	4,909	10,922	15,831	5.3	45,458	2,940	1,354	30.6	755	35.4	12,152	15.7	124.9
	1950	4,546	11,846	16,392	9.1	44,915	2,882	1,302	29.2	748	36.5	12,563	15.8	97.7
	Erie 1951	6,590	20,325	26,915	4.5	58,525	3,470	1,457	27.3	1,011	56.1	12,353	17.0	114.9
	1950	6,717	23,292	30,009	3.9	54,752	3,245	1,368	26.0	981	54.0	13,060	17.0	111.2
	Grand Trunk Western 1951	3,401	9,521	12,922	4.1	44,489	2,214	964	30.1	636	33.2	8,340	20.3	130.4
	1950	3,429	11,762	15,191	4.4	45,266	2,367	1,019	28.7	590	31.1	9,024	19.4	134.4
	Lehigh Valley 1951	1,971	12,915	14,886	7.2	62,554	3,186	1,469	29.6	752	36.6	9,428	19.8	192.5
	1950	3,802	12,342	16,144	6.4	62,132	3,275	1,580	31.1	764	33.5	10,206	19.2	139.0
	New York Central 1951	54,995	108,772	163,767	6.5	41,219	2,630	1,202	33.0	661	32.2	10,106	16.0	84.1
	1950	50,943	133,778	184,721	4.2	36,218	2,483	1,160	33.2	655	30.5	11,203	14.8	93.0
	New York, Chic. & St. L. 1951	5,946	19,425	25,371	5.4	45,092	2,604	1,160	31.6	1,128	55.3	13,554	17.6	111.2
	1950	4,611	22,270	26,881	3.9	42,023	2,518	1,146	30.6	1,191	58.0	14,428	17.1	126.4
	Pitts. & Lake Erie 1951	2,930	8,442	11,372	10.3	47,447	3,584	2,152	50.4	506	15.9	25,830	13.4	59.8
	1950	4,113	12,609	16,722	10.4	48,641	3,873	2,374	52.4	448	12.8	32,332	12.6	81.3
	Wabash 1951	8,038	12,970	21,008	4.8	55,764	2,652	1,161	28.1	877	44.6	7,678	21.2	102.9
	1950	6,211	13,335	19,546	2.6	53,719	2,642	1,152	26.8	1,087	56.0	8,927	20.6	92.7
Central Eastern Region	Baltimore & Ohio 1951	44,409	52,295	96,704	5.0	38,705	2,888	1,427	37.2	794	34.6	12,712	13.6	87.1
	1950	33,565	58,658	92,223	7.0	34,205	2,696	1,323	35.4	845	36.6	13,093	12.9	87.7
	Central of New Jersey 1951	393	9,485	9,878	3.4	36,469	2,802	1,484	39.6	336	12.8	8,153	13.6	83.1
	1950	361	9,479	9,840	2.5	35,477	2,752	1,425	37.7	339	13.4	8,126	13.5	88.8
	Central of Pennsylvania 1951	1,595	3,340	4,935	21.9	40,337	3,082	1,688	40.5	685	24.4	16,160	14.1	80.5
	1950	923	3,374	4,297	16.2	39,735	2,954	1,635	39.8	806	27.9	17,039	14.4	68.7
	Chicago & Eastern Ill. 1951	1,499	3,738	5,237	7.0	41,654	2,460	1,225	33.8	974	42.1	5,829	17.0	156.9
	1950	1,677	4,073	5,750	7.1	42,492	2,621	1,288	31.8	893	39.5	5,869	16.4	164.1
	Elgin, Joliet & Eastern 1951	6,105	16,067	22,172	3.5	55,555	2,881	4,594	43.9	220	7.5	19,665	5.9	103.4
	1950	5,956	15,490	21,446	2.5	18,053	2,898	1,591	41.6	208	7.3	18,320	6.6	110.6
	Pennsylvania System 1951	94,298	123,634	217,932	8.5	44,458	2,931	1,400	34.6	610	27.8	13,328	15.6	81.3
	1950	90,543	127,582	218,125	11.3	39,455	2,988	1,470	33.3	654	28.3	14,117	13.7	85.5
	Reading 1951	11,687	24,317	36,004	3.5	37,706	2,880	1,596	44.3	594	20.5	15,559	13.1	66.8
	1950	10,025	19,604	29,629	4.1	36,898	2,956	1,627	42.6	679	23.9	15,419	12.5	74.7
	Western Maryland 1951	5,371	4,004	9,375	2.3	40,024	2,974	1,660	46.8	1,182	40.9	12,259	13.7	59.2
	1950	3,962	4,703	8,665	1.4	40,819	3,060	1,708	45.8	1,298	44.4	12,818	13.6	51.3
Pocahontas Region	Chesapeake & Ohio 1951	50,172	21,693	71,865	5.3	63,301	3,803	2,116	49.7	1,371	49.7	19,750	16.8	78.2
	1950	43,288	24,142	67,430	5.6	54,625	3,406	1,895	46.4	1,367	49.5	18,389	16.3	79.6
	Norfolk & Western 1951	34,379	7,491	41,870	1.8	65,183	4,104	2,244	49.8	1,337	46.6	26,166	16.3	112.1
	1950	26,898	7,687	34,585	2.5	63,851	3,902	2,141	46.9	1,387	48.0	23,605	16.7	100.9
Southern Region	Atlantic Coast Line 1951	14,240	18,924	33,164	2.8	35,761	2,208	989	33.6	817	42.4	4,982	16.3	66.8
	1950	11,077	21,668	32,745	2.7	32,459	2,243	1,018	31.9	880	44.7	5,124	14.5	72.4
	Central of Georgia 1951	2,930	5,008	7,938	6.1	36,952	2,063	950	31.6	906	43.2	4,196	18.0	83.2
	1950	1,970	6,339	8,309	3.5	31,532	1,803	849	30.7	984	45.0	4,460	17.6	92.4
	Gulf, Mobile & Ohio 1951	3,816	10,887	14,703	3.8	62,188	3,208	1,521	31.1	1,058	48.5	5,547	19.4	129.6
	1950	2,922	12,350	15,272	2.3	62,365	3,177	1,519	30.5	1,107	48.7	5,834	19.7	141.3
	Illinois Central 1951	25,405	30,579	55,984	1.8	40,121	2,437	1,131	34.4	1,029	48.4	8,971	16.8	89.1
	1950	19,389	35,292	54,681	1.8	42,388	2,502	1,184	33.8	1,128	51.2	9,301	17.2	88.1
	Louisville & Nashville 1951	29,100	13,657	42,757	7.6	37,757	2,427	1,214	37.6	995	42.8	8,976	15.6	105.3
	1950	28,790	16,551	45,341	9.3	34,829	2,247	1,141	36.6	940	39.2	9,159	15.6	105.0
	Nash., Chatt. & St. Louis 1951	1,404	4,231	5,635	4.7	42,457	2,073	980	31.0	1,141	52.3	6,524	20.5	139.8
	1950	1,142	4,394	5,536	3.1	39,754	1,852	895	30.4	1,177	51.4	6,341	21.5	90.2
	Seaboard Air Line 1951	11,737	15,784	27,521	1.8	44,216	2,507	1,110	31.6	959	48.1	6,260	18.0	101.7
	1950	9,142	18,177	27,319	1.7	40,949	2,379	1,080	31.6	1,023	49.3	6,325	17.7	99.7
	Southern 1951	13,264	29,758	43,022	4.5	39,157	2,324	1,050	30.0	903	45.5	6,218	17.0	81.2
	1950	13,204	28,818	42,022	3.7	35,752	2,158	982	28.5	959	47.6	6,291	16.7	79.6
Northwestern Region	Chicago & North Western 1951	18,457	31,744	50,201	4.4	40,418	2,566	1,211	32.5	601	27.3	3,739	16.6	66.4
	1950	15,987	33,826	49,813	3.8	39,454	2,531	1,173	31.5	619	28.3	3,967	16.3	74.6
	Chicago Great Western 1951	1,942	5,525	7,467	2.7	64,999	3,702	1,786	41.9	1,055	45.1	5,555	17.6	153.4
	1950	1,090	6,263	7,353	2.4	65,022	3,834	1,775	30.0	1,206	55.7	5,946	17.0	156.2
	Chic., Milw., St. P. & Pac. 1951	30,314	36,924	67,238	3.9	42,440	2,562	1,177	31.2	640	31.1	3,982	16.7	79.1
	1950	22,970	42,016	64,986	2.0	40,340	2,485	1,168	30.5	744	34.6	4,407	16.3	80.3
	Chic., St. P., Minn. & Omaha 1951	1,299	8,315	9,614	3.9	30,379	2,005	946	34.0	656	29.6	3,837	16.1	76.3
	1950	1,190	8,214	9,404	2.9	24,956	1,909	866	30.4	573	26.9	3,384	13.7	81.2
	Duluth, Missabe & Iron Range 1951	12,161	1,076	13,237	3.4	37,647	2,385	1,279	47.7	163	6.1	3,985	16.7	31.4
	1950	13,661	849	14,510	3.3	27,627	1,886	998	42.6	87	3.9	2,242	15.5	26.4
	Great Northern 1951	22,226	19,769	41,995	3.4	40,549	2,408	1,135	32.8	851	37.9	4,530	17.0	72.6
	1950	20,220	16,929	37,149	3.4	41,455	2,523	1,222	32.3	1,038	44.3	5,232	16.6	79.7
	Minneap., St. P. & S. Ste. M. 1951	5,926	7,873	13,799	6.6	39,232	2,032	966	32.5	796	37.5	2,906	19.4	112.5
	1950	5,006	8,990	13,996	5.1	36,852	2,003	975	30.7	834	37.4	2,973	18.7	111.3
	Northern Pacific 1951	17,929	16,774	34,703	5.6	42,429	2,540	1,194	33.0	889	38.9	4,661	16.9	75.2
	1950	16,338	13,533	29,871	4.5	43,638	2,600	1,246	32.6	1,041	44.8	5,044	16.9	78.0
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1951	49,337	33,301	62,638	4.7	58,281	2,755	1,092	27.2	1,087	61.9	6,966	21.3	118.8
	1950	41,594	35,570	77,164	4.1	56,533	2,699	1,048	25.6	1,194	75.5	7,131	21.1	120.4
	Chic., Burl. & Quincy 1951	16,968	24,709	41,677	3.5	52,511	2,781	1,282	32.0	1,144	54.6	5,556	19.0	81.3
	1950	14,412	28,952	43,364	2.9	53,080	2,826	1,336	31.5	1,237	56.1	6,167	18.9	82.0
	Chic., Rock I. & Pac. 1951	11,170	25,803	36,973	4.0	47,094	2,572	1,107	31.3	995	50.7	4,589	18.4	121.5
	1950	8,818	24,557	33,375	2.4	48,933	2,613	1,197	30.1	1,247	60.8	5,581	18.8	114.4
	Denver & R. G. Wn. 1951	7,811	5,893	13,704	3.3	46,004	2,905	1,413	33.6	1,117	47.2	6,495	16.0	88.4
	1950	7,489	5,619	13,108	3.0	46,883	2,809	1,376	33.6	1,057	45.3	6,134	16.8	80.7
	Southern Pacific 1951	27,352	44,709	72,061	2.7	47,292	2,812	1,173	27.1	977	52.5	8,909	17.1	94.8
	1950	24,654	43,585	68,239	2.9	47,581	2,887	1,238	27.3	1,171	60.3	10,013	16.7	93.0
	Union Pacific 1951	28,163	32,064	60,227	2.0	58,500	2,739	1,224	30.5	1,579	78.3	10,194	21.7	119.7
	1950	25,345	33,439	58,784	2.6	61,672	2,841	1,248	28.9	1,594	79.6	9,960	22.0	114.0
	Western Pacific 1951	2,725	5,403	8,128	2.6	70,003	3,096	1,416	29.7	1,458	70.2	8,996	22.8	122.0
	1950	1,634	3,268	4,902	7.7	65,385	2,978	1,314	28.2	1,887	92.2	8,459	22.1	98.5
Southwestern Region	International-Gt. Northern* 1951	828	6,767	7,595	2.1	51,226	2,516	1,162	33.5	924	43.1	6,327	20.5	101.5
	1950	723	7,055	7,778	.9	49,269	2,461	1,079	30.9	886	42.4	6,190	20.2	102.2
	Kansas City Southern 1951	1,333	5,961	7,294	4.3	68,152	3,526	1,651	33.0	1,236	56.3	10,682	19.5	150.0
	1950	1,090	5,961	7,051	2.5	68,671	3,541	1,644	30.9	1,297	60.6	10,666	19.6	109.7
	Mo.-Kans.-Texas Lines 1951	3,464	6,888	10,352	6.1	49,163	2,393	1,019	28.0	1,272	69.1	4,126	20.6	117.2
	1950	2,683	7,250	9,933	4.2	45,250	2,338	1,013	27.8	1,329	71.5	4,297	19.4	113.2
	Missouri Pacific* 1951	17,697	14,479	32,176	2.5	53,477	2,549	1,125	31.2	1,404	70.9	6,726	21.2	115.5
	1950	15,266	20,559	35,825	1.8	49,334	2,466	1,108	30.0	1,359	66.7	7,009	20.2	117.4
	Texas & Pacific 1951	2,735	6,625	9,360	4.9	58,560	2,772	1,077	27.7	1,241	71.9	6,749	21.1	98.9
	1950	2,375	7,209	9,584	6.5	54,609	2,667	1,038	26.6	1,321	77.2	6,898	20.5	144.6
	St. Louis-San Francisco 1951	8,452	12,814	21,266	3.1	45,213	2,385	1,046	30.2	1,014	53.1	4,879	19.0	72.2
	1950	6,520	13,405	19,925	3.3	40,007	2,263	1,019	29.6	1,133	56.5	5,022	17.7	74.2
	St. Louis Southw. Lines 1951	2,018	4,263	6,281	2.0	52,784	2,640	1,180	27.7	1,914	95.7	8,093	20.0	105.1
	1950	1,617	5,092	6,709	2.0	49,077	2,525	1,129	26.6	2,012	102.0	8,349	19.5	121.9
	Texas & New Orleans 1951	5,405	16,162	21,567	3.6	46,450	2,595	1,152	30.7	1,214	59.8	6,153	18.0	93.1
	1950	3,319	17,609	20,928	2.6	44,437	2,392	1,059	29.7	1,280	63.4	6 414	18.7	105.6

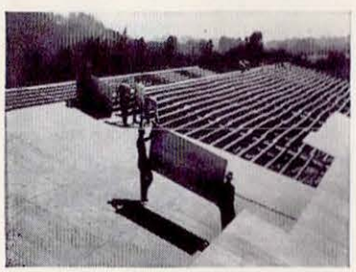
*Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Choose Plywood For All These Railroad Jobs

CAR CONSTRUCTION

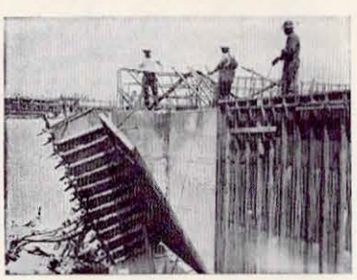
Siding and lining reefers; bunkers and bulkheads in reefers. Siding and lining box cars, work cars and other rolling stock. Underlayment for floor coverings, luggage racks, interior details in passenger cars.

BUILDING and MAINTENANCE



Siding, interior paneling, movable partitions and cabinet work . . . subflooring, wall and roof sheathing. Station booths and counters. Signs and signal boards. Parts bins. Pallets. Track shims. Portable buildings.

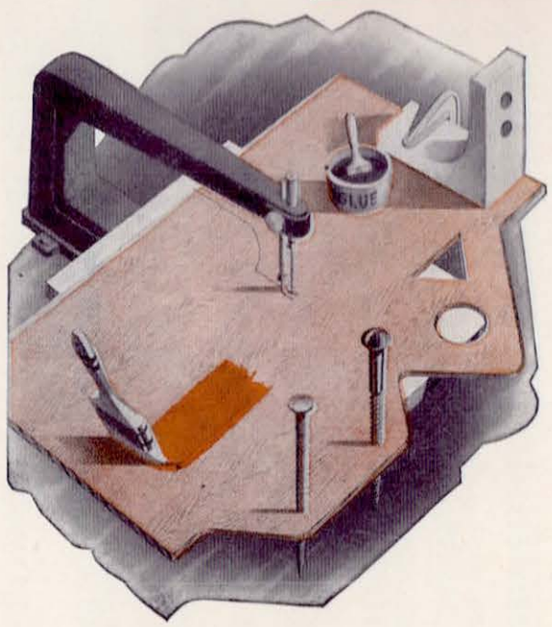
CONCRETE FORM WORK



For stations, shops and maintenance buildings . . . bridges, aqueducts and other concrete jobs . . . re-usable plywood concrete form panels offer these advantages: smooth, fin-free concrete; time and labor savings through simplified form construction; low cost-per-use.

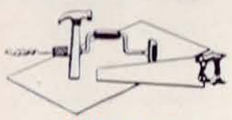
Only plywood gives you all 6

WORKABILITY



FAST fabrication and easy workability come naturally to Douglas fir plywood. These cross-laminated real wood sheets can be worked or machined to *any* shape. It can be sawn, planed, finished like ordinary wood . . . but *unlike* ordinary wood, plywood can be fastened close to the edge without splitting . . . jigged to indicated shapes, bent, drilled. Won't shatter, split or puncture. May be machined to the hairbreadth tolerances required in pattern making, yet it works with ordinary tools.

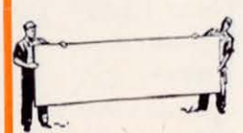
Workability is but one of many advantages which make plywood the standout choice for hundreds of construction, manufacturing and maintenance jobs. Douglas Fir Plywood Association, Tacoma 2, Washington.



1 Workability

2 Cross Laminated Strength

3 Attractive Appearance

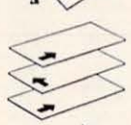


4 Large Panel Size

5 Tested Quality

6 Light Weight

Douglas fir plywood is real wood, made by "unwinding" giant logs



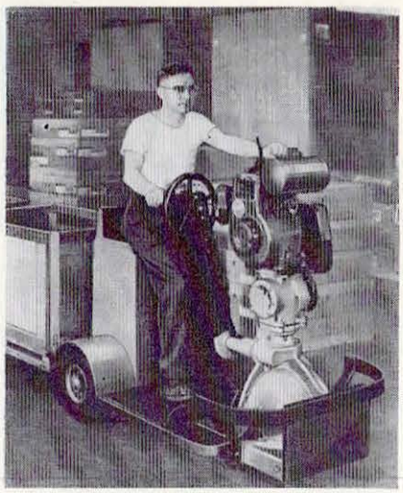
into thin wood sheets which are inseparably cross-laminated

to form large, light panels having beauty and great strength

Douglas Fir Plywood

AMERICA'S BUSIEST BUILDING AND INDUSTRIAL MATERIAL

NEW and IMPROVED PRODUCTS of the MANUFACTURERS

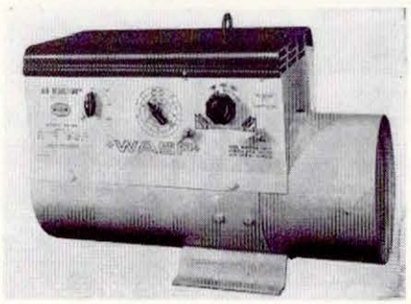


The "Truc-Tor" Model DR tractor, recently produced by the Truck-Man Division of the Knickerbocker Company, Jackson, Mich., is said to pull up to 13 times its own weight (990 lb.) on dry, level concrete. The air-cooled engine of 5.8 hp. is reported to operate a full eight-hour shift on approximately one gallon of gasoline. The power turret revolves 360 deg.

Infrared Duplicator

The Thermo-Fax duplicator, announced by the Minnesota Mining & Manufacturing Co., St. Paul, Minn., utilizes infrared light to produce copies of typed, printed or penciled pages in little more than ten seconds. It is intended to meet the frequent office need for "an extra copy or two" in a hurry, at low cost and without skilled help. The entire unit is about one-third the size of an office desk and is used in normal office light. It operates on 110-volts alternating current; needs no dark room, no special "masters" no negatives and no developing or drying.

To operate the machine, a single page of the material to be copied is placed in the duplicator together with a sheet of Thermo-Fax copying material. The cover of the machine is then closed; a button pressed, and in ten seconds the copy is produced.



D.C. Arc Welders

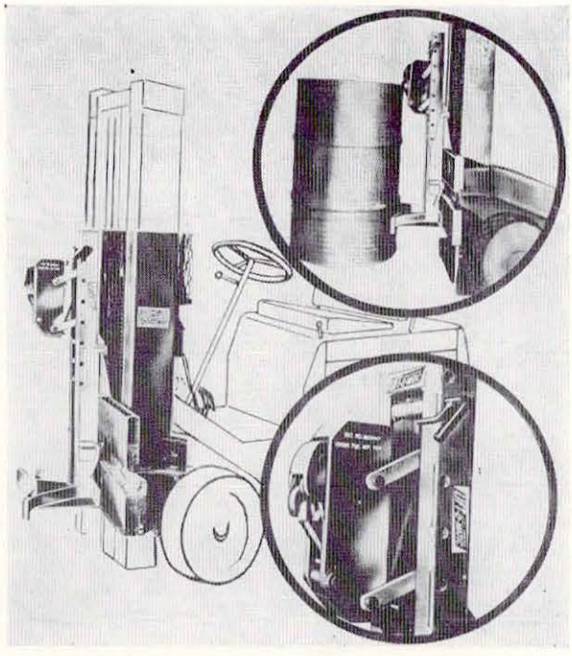
Model GA "Wasp" direct current arc welders, available in 150- and 200-amp. sizes, have been announced by Air Reduction Sales Company, a division of Air Reduction, Inc., New York. Designed to further advance the efficient performance of the Wilson line, the volt-ampere characteristics of these machines make them especially suited to d.c. straight-polarity Heliwelding with Thor-Tung. Good commutation at all settings, plus the advantages of self-excitation and split-pole, cross-field design are said to provide good operation at all current settings. Continuous overlap from each current range to the next provides an unbroken range of welding current from 30 to 250 on the 200-amp. welder, and 20 to 185 on the 150-amp. machine.

The machines are easily portable when mounted on a two-wheeled carriage and require small floor space because of their compact construction.

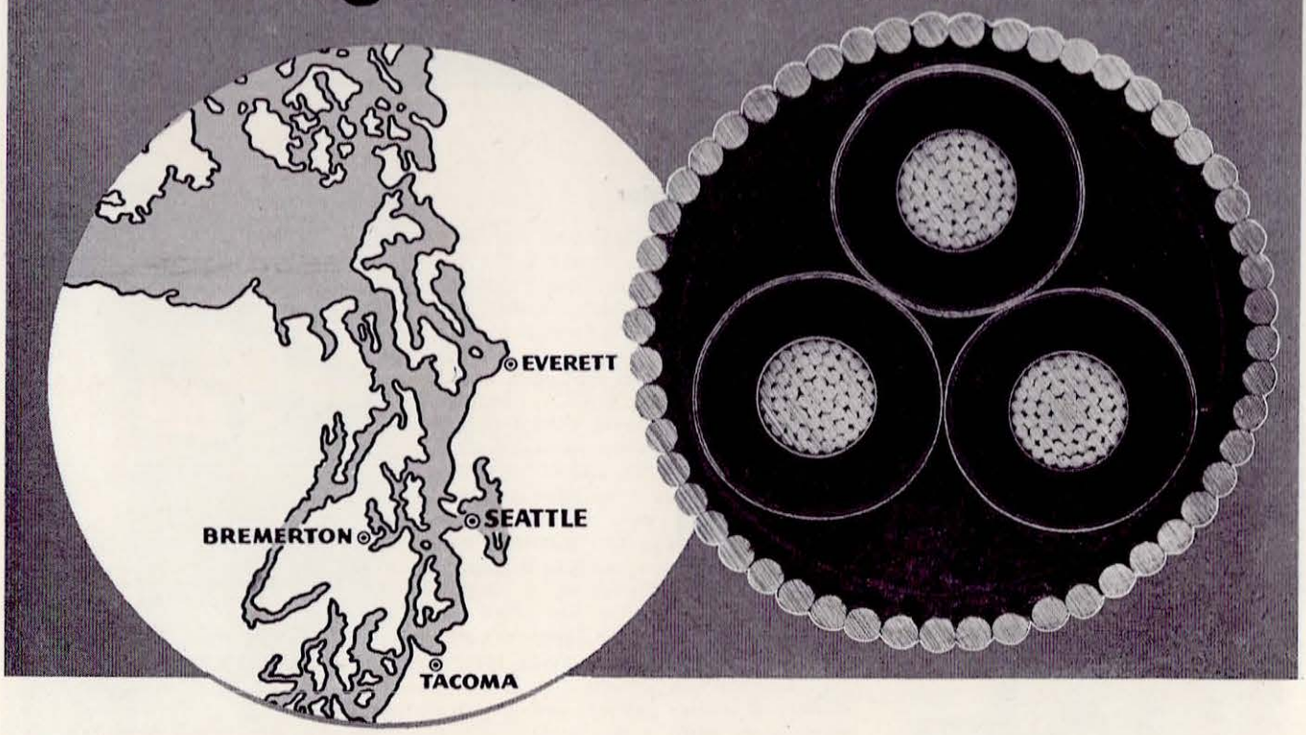
Drum Attachment for Lift Trucks

A new attachment for the handling of any kind or size of drum — fiber or steel, regardless of diameter, height, bead or rim size — has been announced by Marvel Industries, Inc., Evanston, Ill. Made to fit any make or model of power lift truck, the Liftomatic can be attached or removed by one operator in just a few minutes. The attachment is mechanical and completely automatic, and requires no additional power controls.

Use of the Liftomatic attachment permits pick-up, transportation, tiering and placement of drums without the use of pallets or loss of space.



19 high voltage OKONITE SUBMARINE CABLE CROSSINGS in Puget Sound area alone



57 CIRCUIT MILES INSTALLED BY FIVE UTILITIES PROVE OKONITE CABLES CAN TAKE IT

Date	Footage	Location
1926	20,700 ft.	President Point
1926	20,700 ft.	President Point
1926	15,000 ft.	Lake Union
1930	15,000 ft.	Fox Island
1931	16,000 ft.	Vashon Island
1931	25,000 ft.	Lake Washington
1931	15,000 ft.	Mercer Island
1933	10,000 ft.	Hood's Canal
1935	23,000 ft.	Lake Union
1936	10,000 ft.	McNeill Island
1939	8,500 ft.	Hood's Canal
1939	2,000 ft.	Lake Union
1940	22,000 ft.	President Point
1942	5,000 ft.	Bainbridge Island
1945	22,000 ft.	President Point
1950	16,000 ft.	Vashon Island
1951	39,200 ft.	San Juan Islands (2)
1951	12,000 ft.	San Juan Islands
	297,100 ft.	

When you specify Okonite rubber-insulated cables —for *any* purpose above or underground—you are sure of dependable year-in year-out performance. For you get electrical insulation designed for the job and a covering engineered to protect that insulation during its full life span under the specified operation conditions. You also get the advantage of Okonite's proved manufacturing techniques, such as insulation applied by the strip process and vulcanization in a metal mold. These are your assurance of long-lived, trouble-free electrical circuits.

Installations in all voltage ranges and under the most exacting conditions are proving every day that Okonite is your most economical cable buy. The Okonite Company, Passaic, N. J.

The best cable is your best policy

9682

OKONITE SINCE 1878 *insulated wires and cables*

A DRAMA IN TRANSPORTATION ECONOMICS

The state of New York, in the person of Governor Dewey—quite possibly without conscious purpose—seems bent on dealing with the Long Island Rail Road and its owners as King David did with the luscious Bathsheba and her luckless spouse, Uriah the Hittite. It will be recalled that Old David fell enamoured of the lady and contrived to have Uriah bumped off, after which David took Bathsheba to his bed and board.

Similarly, the state of New York seems to be lusting for possession of the Long Island Rail Road, and the owners and principal creditors (predominantly the Pennsylvania Railroad) are blocking easy access to the property—so the worthy governor is trying to find a device wherewith to evade or discard the troublesome owners. The governor, too, has a faithful Joab in the state-appointed Long Island Transit Authority, quite willing to do what it can to serve the royal purpose of putting the superfluous husband "in the forefront of the hottest battle that he may be smitten and die."

Uriah, in this modern version of the drama, however, is more alert than his prototype to what is afoot and King David hasn't got the lady in his clutches yet. Quite likely His Majesty and minions will have to do a lot of arguing in the courts before the royal concupiscence will achieve its satisfaction. The Long Island Transit Authority wants to get possession of the railroad, allegedly to try to dispose of it to private owners. If anybody ever heard of a governmental body getting a big operation like this in its hands and willingly relinquishing it, it would be interesting to hear of such an instance of political altruism.

This Long Island drama offers one of the most instructive condensations imaginable of the essence of the problem of transportation policy confronting the nation. Here is a great company with an enormous investment, providing an indispensable public service, which has fallen on evil days for no intrinsic reasons at all, but solely because the State has—

(1) paralleled its services with toll-free highways, siphoning off all the local freight business and a substantial part of the full-fare passenger business;

(2) grossly overburdened the property with taxes and with assessments for grade crossing elimination; and

(3) persistently held the road's rates at a starvation level.

Having thus driven the property into bankruptcy, the State now insists that it should step in as purchaser at a nominal price—on the allegation that the lack of net earnings, arising from state action, is the measure of the property's actual value.

Precedent for Stockholders

Those railroad investors who are lax in defending the railroads against the kind of treatment they have been getting at the hands of the federal and state governments—expecting that, if socialization ensues, they will receive "a fair price" for their holdings—will do well to take heed from the Long Island's experience. If, as is probable, this is a precedent-making case, then socialization isn't going to settle any more of the problems of railroad transportation than it has those of urban rapid transit.

Colonel Sidney H. Bingham, head of the nation's biggest transit system—the New York subway and bus lines—in a Newcomen Society address on February 29, pointed up the problem, in part, as follows:

"I am firmly opposed to nationalization of transportation. . . . I think progressive private management can do a better

job, and do it at lower cost. . . . Nationalization will not solve our problems but only obscure the solution. . . . The railroads must be aided by a change in our national transportation policy that . . . will require all transportation agencies to compete on a self-sustaining basis. . . ."

In the event that insufficient regulatory and tax relief is provided to enable the railroads and transit lines to continue as wholly self-sustaining industries, Colonel Bingham suggests—instead of out-and-out socialized operation—that government acquire control of the companies by exchange of its revenue bonds for existing securities; and that the properties henceforth be operated, under tax exemption, by a quasipublic directorate, representing both the bondholders and the government. This device might permit resale of the properties to private owners, at a later date, which would scarcely be possible if ownership were completely socialized.

This analysis of Colonel Bingham's is different in detail but not too far removed in principle from the views expressed toward improvements in suburban passenger transportation, set forth by the Lackawanna's operating vice-president, P. M. Shoemaker, and reported in the November 5, 1951, issue of this paper. Mr. Shoemaker said, in substance:

Improvements of the kind suggested appear to be necessary, but they will require expenditures of a magnitude beyond the means of the railroads involved. Therefore, if such improvements are to be made, the interested states must provide and support the terminal properties to be constructed and must underwrite the necessary connections and equipment changes. Either this, or the state should take over all suburban passenger service, owning all the equipment — and the railroads would operate the trains for a charge to cover all costs and taxes, plus a fair fee for management. [The implication is that, having thus defrayed the cost of the service, the state could then recoup itself from riders and from taxpayers, in such proportion from each as would be most expedient.]

The experience of the Long Island Rail Road, and the analyses by Colonel Bingham and Mr. Shoemaker, point inevitably to the conclusion that: *Urban and suburban rapid transit, while indispensable to the continued economic health of large urban areas, has fallen upon evil days because everywhere it is confronted by highway competition which, with the exception of a few bridges and tunnels, is never expected to be self-supporting from user payments as the transit facilities are. The dilemma can be solved only by putting the transit lines and the competing highways on an equivalent basis of self-support—and this equality can be attained either by making the highways self-sustaining or by also paying for transit service, in part, by general taxation.*

The long-haul railroads are confronted with a parallel dilemma—although, so far, one considerably less acute, and involving freight instead of passenger transportation. In the long run, however, government will have to choose between making long-haul commercial use of the highways self-supporting, or giving the railroads a roadway provided partially from taxation—as commercial use of the rural roads is now aided. The principles involved are clear, and becoming clearer every day. Putting them into practice is something else again.

THE DRIPPING FAUCET

Not so long ago New York City was faced with an acute water shortage. During its early stages, although the citizenry cooperated the water engineers reported excessively large volumes of water still moving through the mains. The loss was soon traced to the cumulative effect of millions of leaking and dripping faucets. This waste was eventually reduced, with the help of an all-out publicity campaign to persuade New Yorkers to close valves tightly and get the drippers repaired.

So it is with preventable loss and damage to freight. It receives constant attention from shippers and railroad officers alike. Yet, like the leaking faucet, its repetitive monontony and the comparative insignificance of individual cases—not to mention the lack of a crisis to dramatize the issue—makes it a difficult subject to keep alive and interesting.

The April "Perfect Shipping Month" campaign is aimed at the heart of this problem. Under the joint sponsorship and guidance of the shippers advisory boards' National Management Committee and of the Freight Claim Division of the Association of American Railroads, the month of April every year is designated for dramatizing the need for unrelenting vigilance against the common enemy: carelessness. The mythical figure "Johnny B. Careful" was created by the sponsors to give damage prevention messages a personal appeal to shippers and railroad operating men everywhere.

Individual railroads pursue aggressive loss and damage prevention programs of their own, based on a grassroots understanding of the problem and what must be done to correct the offending practices. These tie-ins with the national efforts of shippers and the A. A. R. "Perfect Shipping Month" this year will provide an excellent background for a renewed, vigorous attack on the railroads' "leaking faucet."

In both the shipping and transportation business it is recognized that careless and rough handling is a principal cause—insofar as carriers are concerned—of most preventable freight loss and damage. Reducing such loss and damage, at bottom, involves nothing more complicated than putting in the time and effort required to do each and every job carefully. But it helps when management recognizes and rewards careful handling in the same measure as improved production, greater sales, or lowered unit costs.

It is quite evident to experienced railroad operating people, however, that this problem will never be successfully licked until some way can be found for compiling performance statistics which take into account *quality* as well as *quantity* of work performed. As long as management appraises a yardmaster, for example, by the *number* of cars he handles—with little regard for *how* he handles them—the yardmaster is tempted to continue to switch cars as fast as he can to keep his count up and to keep superiors "off his neck"—especially if he is not accustomed to bouquets for safe handling.

The PENNSYLVANIA

inaugurates its newly equipped

"MORNING CONGRESSIONAL"

"AFTERNOON CONGRESSIONAL"

"SENATOR"

Placed in regular service March 17

Four completely new Budd-built trains, incorporating 64 cars, will make daily New York-Washington round trips (two trains) and Boston-Washington trips (two trains), the latter in conjunction with the New Haven between Boston and New York. Schedules of the "Senator" and "Afternoon Congressional" are unchanged. The "Morning Congressional" northbound is scheduled to leave Washington at 7:00 a.m. and arrive at New York at 10:55 a.m.; southbound this train is scheduled to leave New York at 6:30 a.m. and arrive at Washington at 10:20 a.m. The new equipment is described and illustrated on the following pages.

Color illustrations courtesy the Budd Company

A parlor car. The main colors are strong, relieved by neutral window shades and head rests touched with red.

Two "Congressionals" and The "Senator" Re-equipped

Pennsylvania advances the attractiveness, quality and scope of the service of these Washington-to-New York and -Boston trains

With the inauguration on March 17 of the newly equipped "Morning Congressional" and "Afternoon Congressional" in the Washington-New York service and the "Senator" in the Washington-New York-Boston service, the Pennsylvania has placed in operation a fleet of 64 new passenger cars, deliveries of which have just been completed by the Budd Company.

Nine Car Types

Outstanding features of the new trains include Bell System radio telephone service, all-drawing-room parlor cars on the "Congressionals," and coffee-shop cars to furnish convenient and attractive meal service to the coach passenger on both runs. Other feature cars are the dining room and kitchen-bar-lounge cars on the "Congressionals," and observation parlor cars with lounges and bar service on all trains. In each of the two all-drawing-room parlor cars of the "Congressionals" there is a telephone room and booth with provision for coin-box service.

There are nine car types in the fleet. The number of cars of each type and their assignments to the two services are shown on page 78. The "Congressionals" are arranged with the coaches forward and the coffee-shop car is placed between the fourth and fifth coaches. Behind the eighth coach is the dining room car, followed by the kitchen-bar-lounge car and the all-drawing-room parlor car. Behind the five parlor cars at the end of the train is the observation-parlor car. Each one of the "Congressionals" has seats for 703 passengers, plus 270 seats in the lounges, dining room and observation-parlor cars.

In the "Senator" five coaches are at the head end, followed by the coffee-shop car, then three more coaches. Following the last coach, in order, are the kitchen-diner

Lounge in an observation-parlor car. The mural is an oil painting on canvas.

The lounge in one of the kitchen-bar-lounge cars for the "Congressionals."

car, three parlor cars, and the parlor-telephone-bar-lounge-observation car. Because there is no all-drawing-room parlor car in the "Senator," a telephone room, identical with that in the all-drawing-room parlor car of the "Congressionals," is included in the observation-parlor car at the expense of four seats in the parlor section. These trains each have seats for 596 passengers and 229 additional seats in the dining, coffee shop and observation-parlor cars.

The exteriors of these trains are unpainted, except for the letterboards, a continuous stripe at the belt rail, and panels for the car numbers or names, and the Pennsylvania keystone monogram near the ends of the cars. These are Tuscan red with gold lettering.

The panels for coach numbers are affixed near each end on both sides of a car. The panels for the parlor car names are centered on each side. The parlor, all-drawing-room parlor and observation-parlor cars are named after famous Colonial and Revolutionary War personages.

A number of unusual features are encompassed in these cars. There are four systems of car heating, two employing low-pressure steam as the distributing medium and two employing liquid. Cooking in the coffee-shop cars and all the dining-car kitchens is done electrically.

On the "Congressionals" one car is given over completely to a telephone room and seven drawing rooms, of which six are so arranged that they may be thrown together in pairs. Each drawing room has seats for five.

One of the coffee-shop cars for coach passengers. It seats 36, half at tables and half at the counter.

Design of the Coaches

The interior decorations of all cars are unified by employing various combinations of red, white and blue throughout. An impressive variety of effects has been achieved, however, by reversals of red and blue and by including a neutral wood tone in some of the combinations.

The coaches each seat 74 passengers—60 in the main passenger compartment and 14 in the smoking lounge. The latter occupies the full width of the car, is furnished with metal-frame arm chairs, and is separated

NEW CARS FOR THE "CONGRESSIONALS" AND "SENATOR"

	Two "Congressionals" (Two trains)	The "Senator" (Two trains)	Total Cars
Coaches	16	16	32
Coffee Shop cars	2	2	4
Kitchen-Bar-Lounge cars	2	..	2
Dining Room cars	2	..	2
Dining cars	..	2	2
All-Drawing-Room Parlor cars with telephone room	2	..	2
Parlor cars	10	6	16
Observation Parlor cars	2	..	2
Observation cars with telephone room	..	2	2
	36	28	64

by wing partitions from the main compartment. Etched safety-glass panels are set in the aisle side of the upper part of the wing partitions, and etched mirrors on the end bulkheads of the coach and lounge sections. All depict historical places or events related to the territory through which the trains pass.

Coach seats are the reclining type, with folding center arm rest. Seat cushions and arm rests are foam rubber; backs have hair and spring cushions. Foot rests are attached to the seat base.

There are four color schemes in the coaches. In all of them the walls above the wainscot and the ceilings are French gray with a stripe on the bag rack of blue with the red wainscot and vice versa. In two of them the wainscot is in a strong but soft tone of red. In one of these schemes the seats are upholstered throughout in a deep blue; in the other, the backs are in woodtone with cushions and arms in blue. The floors are covered in marbleized Linotile, with brightly patterned aisle strips. The fields under the seats are coral gray and the body of the stripe is alabaster, outlined in one case with stripes of ruby red and relieved with spots of a marine blue and in the other outlined with blue stripes and relieved with red spots.

In the other two color schemes the wainscot is in a soft medium blue. Upholstery in one case is burgundy on backs, cushions and arms, and in the other the backs are woodtone with burgundy cushions and arms. With the burgundy and woodtone upholstery combination the Linotile under the seats is marine blue, the body of the aisle strip coral gray, the stripes at the sides alabaster, and the spots ruby red.

In the cars with the blue upholstery in the main passenger compartment the chairs in the smoking room are upholstered in cream or red. The burgundy upholstery in the main compartment is combined with lounge chairs in cream or blue. With the two woodtone combinations the chairs are in blue or red. The reverse color is used for piping.

Entries and passageways at the ends of the cars have walls and ceilings finished in the reverse color from that on the wainscot in the passenger compartment, with the end door in the wainscot color. In the parlor cars as well as the coaches the walls and ceilings of toilets are in French gray, with either red or blue on the inside of the doors.

The Parlor Cars

Throughout the train in parlor cars and coaches alike the window shades are a beige background with wavy coral red stripes. The same colors and pattern are repeated on the head rests. These add remarkably to the feeling of liveliness throughout the train.

At the vestibule end of the parlor car the men's toilet, the regulator, control and linen lockers and open luggage shelves are disposed along the sides of the central passage. At the opposite end is a side corridor from which open the drawing room and the women's toilet. In the passenger section between are parlor car seats for 29 persons. These are center-pedestal rotating type with reclining backs. Seat cushions and arm rests are foam rubber. Backs have hair and spring cushions.

In the decoration of the parlor cars the same three main colors used in the coaches are employed with slight variations. In all Pullman-operated cars, however, off white is applied on the side above the wainscot and on the ceiling instead of the French gray which is used on the coaches, and the floors are carpeted. The parlor cars follow two decorative color arrangements. One combines a blue wainscot and blue feather-pattern carpet with Alpine rust upholstery on the chairs, blue figured drapes, and a red stripe along the front of the hat rack. The other combines a red wainscot and a rose and gray carpet in a cornucopia pattern with blue upholstery, garnet figured drapes, and a blue stripe along the front of the hat rack.

Murals and Decorative Mirrors

As in the coaches, the partitions at the vestibule end of the parlor car are decorated with etched mirrors. The wide partition between the chair section and the drawing room at the other end of the chair section is decorated with a colorful mural painted in oil on canvas. The paintings in the parlor cars are associated with some phase of early American life.

The drawing rooms of the cars decorated according to the first scheme have the inside wall, including the entrance door, as well as the wainscot on the outside and transverse walls, painted blue. They have a ruby red acorn pattern carpet, blue sofa and woodtone chair upholstery. Drapes are garnet and white. In the other cars the inside wall and wainscot of the drawing room are red, the carpet blue and the sofa upholstery Alpine rust. The chair upholstery is woodtone and the drapes are blue and white. Transverse walls are in off white, with a colored mural of carved linoleum above the sofa. At one end of the car passageway walls and end doors are red and room doors blue. The colors are reversed at the other end of the car.

Observation Cars

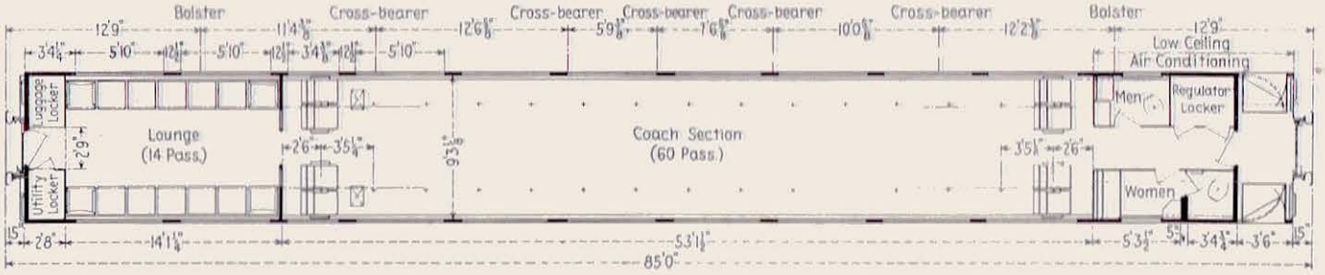
At the vestibule ends of these cars are the control and regulator lockers, and open luggage shelves. Between these and the parlor section, men's and women's toilet and wash rooms are placed on opposite sides of the center passageway. The parlor section of the two cars for the "Congressionals" seats 18 persons; in the "Senator," 14.

Between the parlor section and the lounge is an enclosed bar. Against the lounge partition is a built-in curved seat extending around the side of the car. This seats five. Adjacent to this section is a fixed table and seats for four. On the opposite side of the section are seats for four in a settee and two chairs. Separated from the lounge by low glass partitions is the observation section with seats for 12. Facing the rear against the lounge partitions are double seats for two on each side. Four persons may be seated on each side of the section in six chairs and a settee.

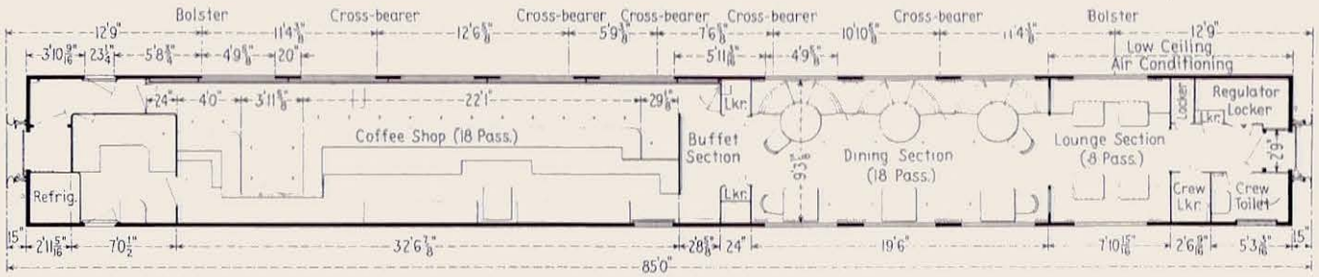
The parlor section of all of these cars is finished in marine blue on the wainscot and the carpet is rose, brown

Etched glass panels in the wing partitions and mirrors on partitions at the end of the lounge section of the reclining-seat coaches depict the Revolutionary period. Color combinations in these cars are similar to those in the parlor cars.

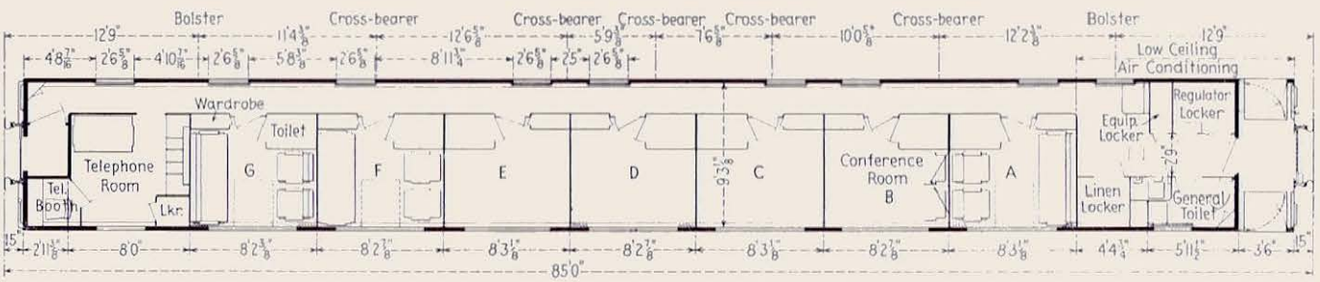
Floor plans of the new passenger-train cars for the two



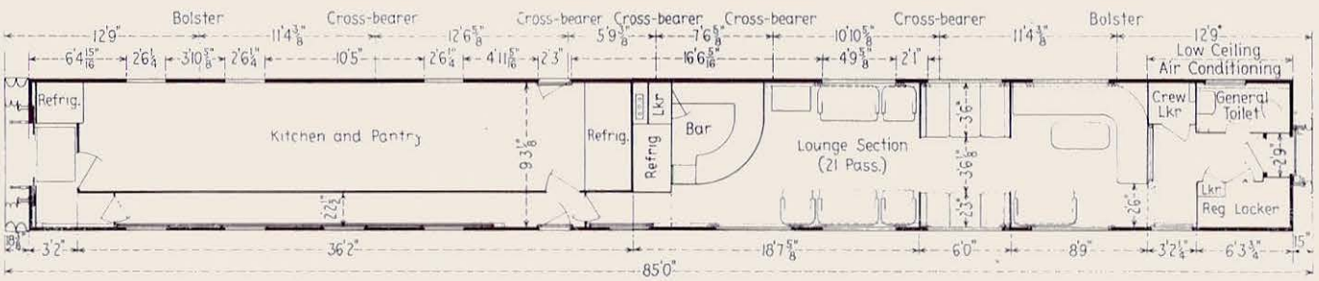
Coach.



Coffee-shop car.



All-drawing-room parlor car, with telephone room, for the "Congressionals."



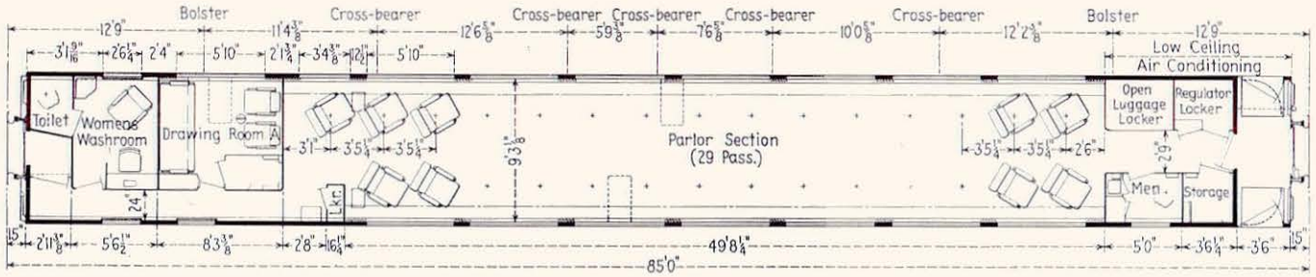
Kitchen-bar-lounge car for the "Congressionals."

and blue in a feather pattern. The chairs are upholstered in Alpine rust and drapes are blue and cerise. The lounge and observation sections have floor and walls like the parlor section. Sofas and settees are in blue, cream with red piping, and red with blue piping. Chairs in the observation section are blue. The slats of the venetian blinds at the windows in the observation section are off white and the tapes red. In this section the blinds are locked in the raised position.

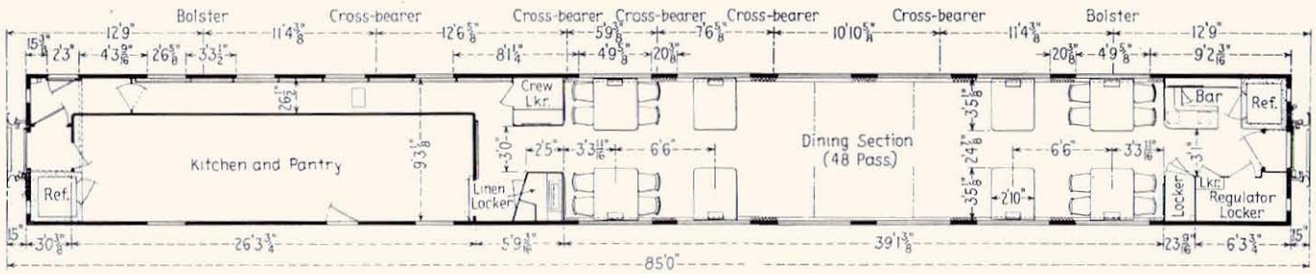
One of the most interesting cars in the "Congressionals" is the all-drawing-room parlor car, designed primarily for business men and government officials traveling between Washington-Philadelphia-New York, who wish to work or carry on conferences en route. There are seven rooms, each with seats for five persons. These rooms are nearly identical in arrangement and dimensions with the drawing room in each parlor car. At the blind end of the car is the telephone waiting room with its soundproof booth. Six of the rooms are arranged in pairs separated by a folding partition, permitting each pair to be opened up into a room for ten.

The six rooms have blue walls and blue wainscot under the window. The door is red and the ceiling and upper

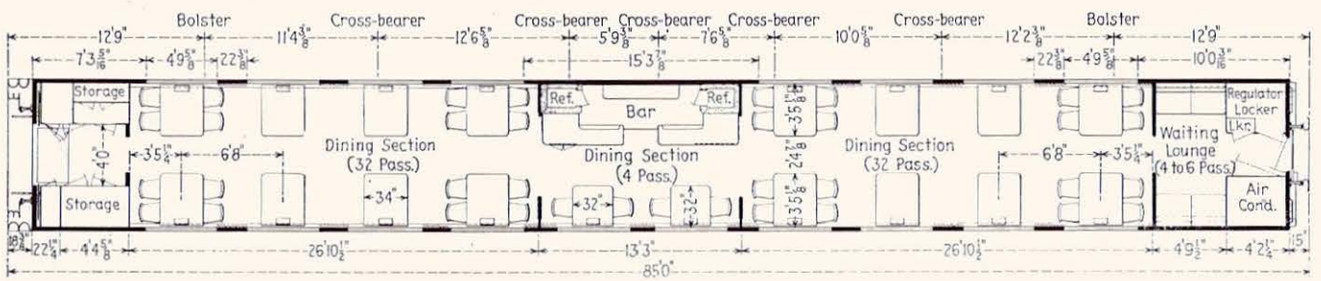
"Congressionals" and the "Senator" of the Pennsylvania



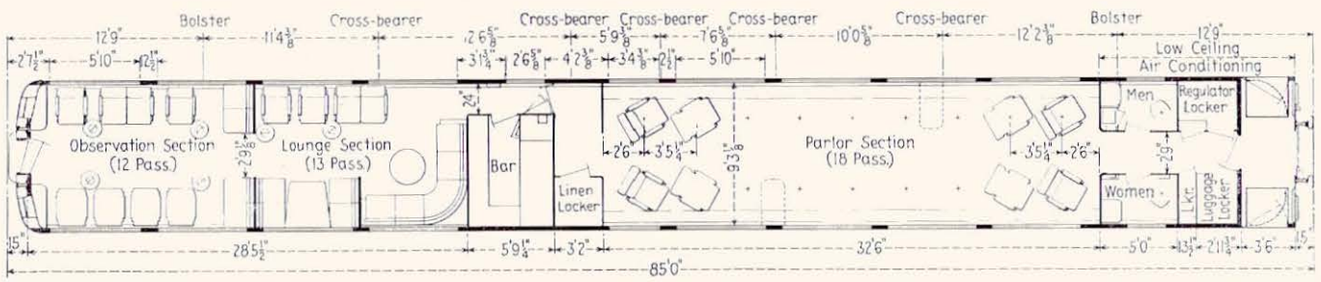
Parlor car.



Dining car for the "Senator."



Dining-room car for the "Congressionals."



Observation-parlor car for the "Congressionals." The "Senator" is the same, except for inclusion of a telephone room.

outside wall is off white. The folding partition is Formica with a natural wood surface. The carpet is ruby red; the upholstery of the sofa is woodtone, and of the chairs blue. The patterned drapes are garnet. Above the sofa in each room is a carved linoleum plaque, different in each room.

The seventh room is essentially the same as the others, except that the partition opposite the sofa is permanent. This is finished with the wainscot in blue and the upper wall in off white.

The telephone room and booth are carpeted in a blue acorn pattern matching the corridor. The walls are red and the ceiling off white. The two-place settee for passengers waiting for calls is covered with red saddle-finish plastic. Sides and ceiling of the corridors are blue; the doors, red.

Coffee Shop Cars

The coffee shop car, which is designed primarily to serve coach passengers attractively, is divided into three sections; a lunch counter which seats 18, a dining section with six tables for 18, and a small lounge for 8.

All cooking is done behind the counter on the electric

Drawing room of a parlor car. The mural (in back of man's head) is carved linoleum, colorfully painted.

Looking through the lounge section toward the

appliances, including an electronic Radarange. Dishwashing and food storage are concealed in a pantry at the end of the car and adjacent to the cooking area behind the counter.

Walls in the dining and lounge sections are gray above the wainscot and built-in seats. The ceiling of the lounge section is red; that in the dining section, gray. The floor in both sections is covered with acorn pattern blue carpeting and the drapes are red. Venetian blinds in the lounge have gray slats with red tapes. In the dining section the slats are red with gray tapes.

The dining section has three round tables seating four each and three rectangular tables for two each. At each circular table there is a built-in settee and two chairs covered in red saddle-finish plastic with blue piping on the settees. Between the settees are cabinets for various supplies. These are natural wood finish on the front and black Formica on top.

Between the dining section and the lunch counter is a small buffet section. The partitions between the dining section and buffet section have etched glass mirrors and the area around them is painted red.

The coffee-shop section has a coral-gray Linotile floor with a border of ruby-red and broad black stripes. On the coffee shop side of the buffet partition is an etched glass panel. The wall below this is in red. The transverse wall at the pantry end of the counter is decorated with an oil painting. The front of the counter is decorated with a design executed in carved linoleum. The counter top is black Formica. The canopy over the counter is blue with a red stripe and a white chevron decoration. Seats are upholstered in blue plastic.

The Dining Cars

The kitchen portion of the kitchen-bar-lounge car serves the dining room car which is directly ahead of it in the consist of the "Congressionals." The kitchen is completely electrified.

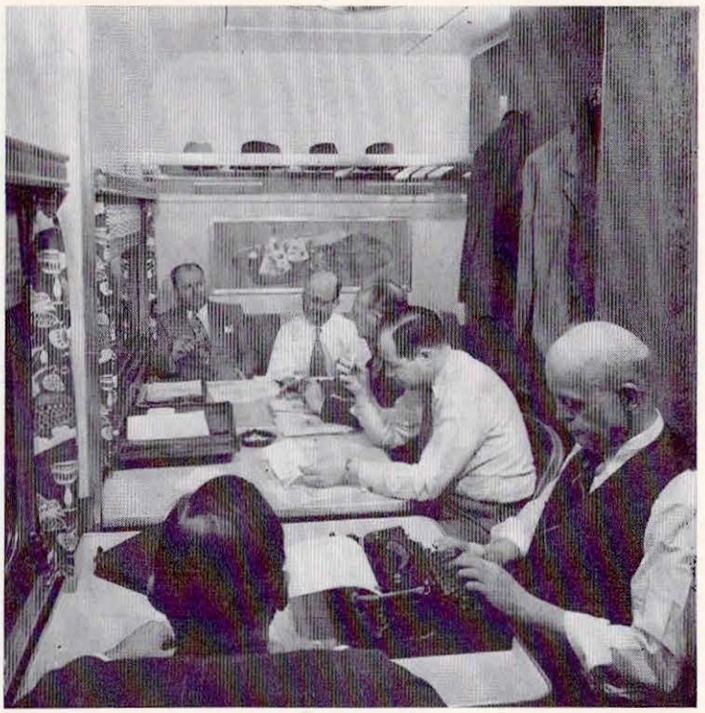
The lounge section of the car is decorated with blue wainscot, a rose, brown and blue fern feather pattern carpet, and a red ceiling above off white pier panels. Valances over the windows are satin-finish metal with a blue center stripe. Built-in seats are upholstered in red saddle-finish plastic, in Alpine rust mohair, and blue saddle finish plastic. Chairs are done in blue fabric with vertical stripes. Tables and bar are covered with a red skylark pattern Formica. On the front of the bar is a carved linoleum plaque.

The lining on the side walls above the wainscot of the full-length dining room car and the dining car is of the so-called "tumble-home" type, in which the walls taper inward toward the ceiling.

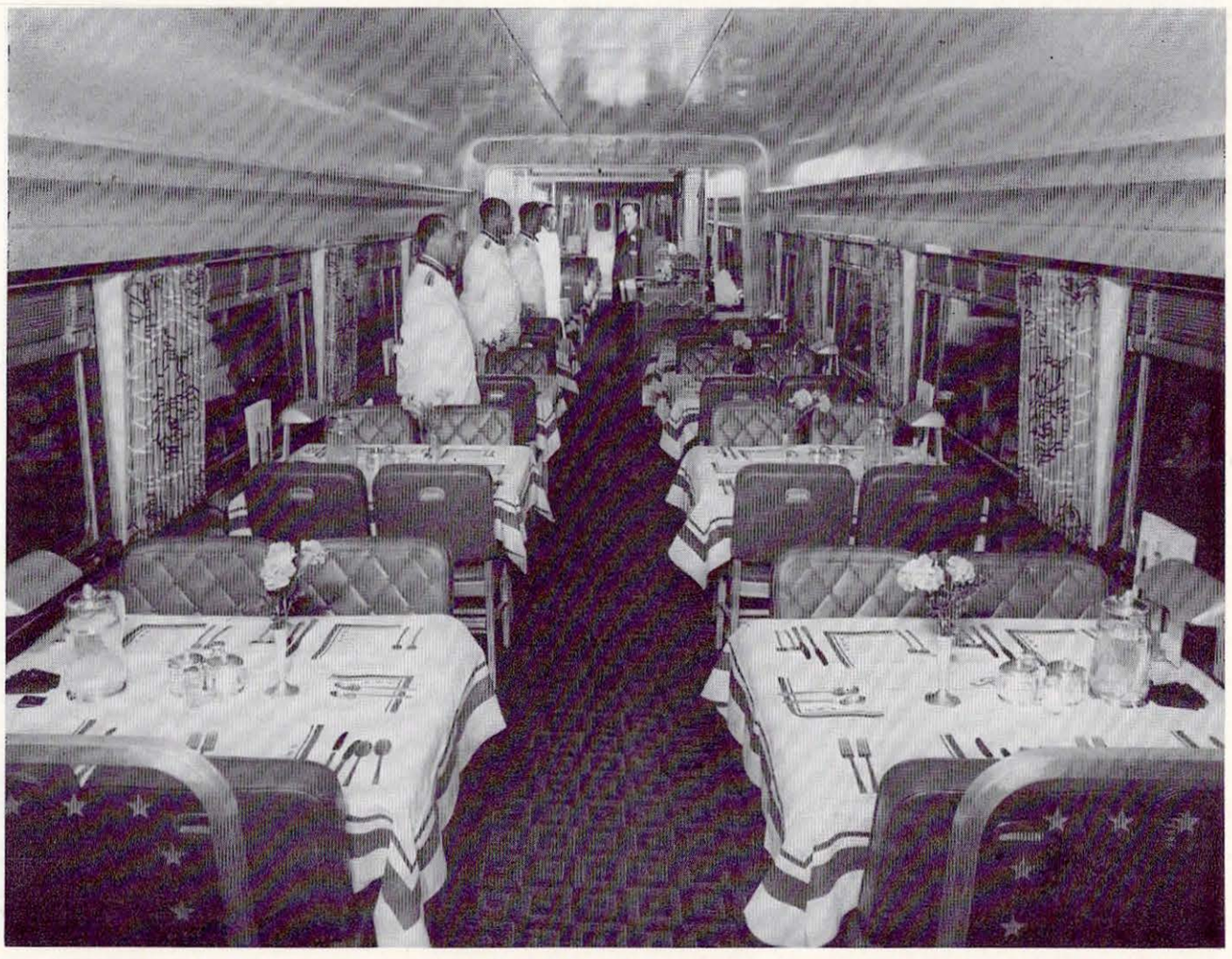
Immediately adjoining the kitchen there are lockers on both sides of the full-length dining car. At the opposite end of the car is a small lounge seating four persons. Adjoining this lounge section are lockers, one of which houses the air-conditioning evaporator and the air-distributing fans. Between the lounge and the end of the car are lockers on each side of the center passageway. The dining room has 16 tables seating four each. These are divided in the middle by a bar and steward's station, in front of which are two tables seating two each and increasing the total seating capacity of the room to 68.

In the dining room, including the bar, the wainscot and carpet are blue and the walls off white. Ceilings in the two dining sections are also off white. In the bar section the ceiling is red. The dining chairs and the seats in the waiting lounge are covered with magenta plastic. Venetian blinds have red slats with natural linen tapes. The drapes are pink. These are confined to the pilasters. The partitions at the end of the waiting lounge and at the opposite end of the dining room are decorated

observation section of the observation-parlor cars.



A group at work in a drawing-room suite in one of the "Congressional" all-drawing-room parlor cars.



The "Congressional" dining-room car looking from the lounge end.

with etched mirrors. The bar and the lounge are separated from the dining section by full-height wing partitions in which are panels of etched safety glass. The front of the bar is blue with a red stripe and white chevron near the top.

Behind the bar is a gold tinted mirror on which is etched a blockhouse scene. At either side of the mirror is a carved linoleum plaque.

The dining car for the "Senator" is of conventional arrangement but has a completely electric kitchen. The dining section seats 48 at 12 tables. At the end opposite the kitchen is a bar and steward's station.

The floor of this car is covered with a ruby-red carpet and the wainscot is red. Side walls and ceilings are off white relieved by a red stripe along each side just under the cove lights. End walls, venetian blind slats, and plastic chair covering are blue.

The buffet section between the dining section and the passageway beside the kitchen has a coral gray Linotile floor with red walls and ceiling. A carved linoleum plaque is affixed to the kitchen bulkhead and above it is a blue stripe and white chevron.

Unity—But No Monotony

The use of strong colors, combined with gray or white walls, skillfully relieved by neutral beige and woodtone, is the conception of the train architects, Harbeson, Hough, Livingston & Larson. Designs for the etchings on mirrors and glass panels were also furnished by this organization. Oil paintings are the work of Auriel Bessemer of New York City and J. Hopkins of Beth Ayres, Pa.

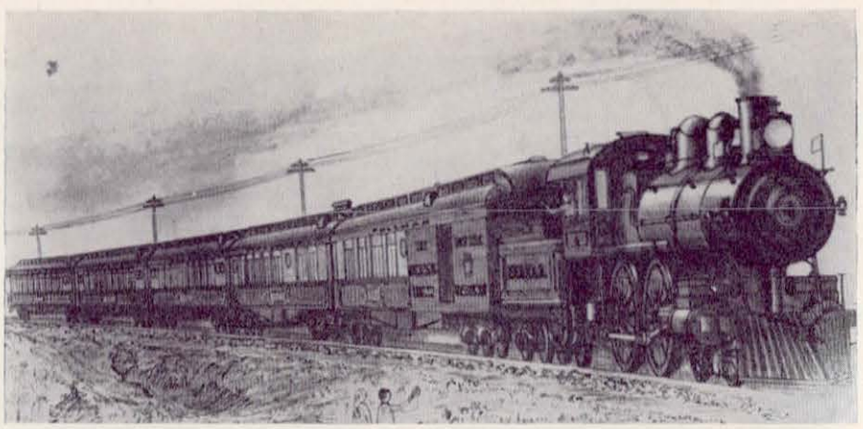
While the repetition of the same basic colors throughout the train creates an impression of unity, no two adjacent cars are alike in the way these colors have been used. Nowhere in a train is there an impression of dullness or monotony.

SIXTY-SIX YEARS OF SERVICE BEHIND NEW "CONGRESSIONAL"

Today's "Congressional," though new in equipment, is rich in tradition; its history goes back almost exactly two-thirds of a century, to December 7, 1885, which makes it one of the oldest named trains in America.

On that day, the "Congressional Limited" — the "Limited" was dropped some years ago — was established as a daily train in each direction between Washington and New York, in response to the request of a number of members of Congress, whose duties required frequent trips between the two cities, for a fast train that would enable them to make the trip after the legislative day. In the ensuing 66¼ years, it has traveled over 11,000,000 miles — equal to 3,700 transcontinental trips — and is said to have carried "more passengers of fame and distinction than any other train in America." Presidents Harrison, McKinley, Theodore Roosevelt, Taft and Coolidge have been among its riders.

Its original northbound schedule, including the then necessary ferry trip across the Hudson river between Jersey City and New York, was 5½ hours; departure from Washington was at 3:50 p.m., with arrival at New York at 9:20. Southbound, the train was five minutes faster, leaving New York at 3:40 p.m. and arriving in Washington at 9:05. Reduction to the present 3-hour 35-minute schedule in each direction was accomplished in five steps over the years, including a major improvement in 1910, when the opening of New York's Pennsylvania Station made it possible to run the train directly into mid-Manhattan, and eliminated the Hudson river ferry crossing.

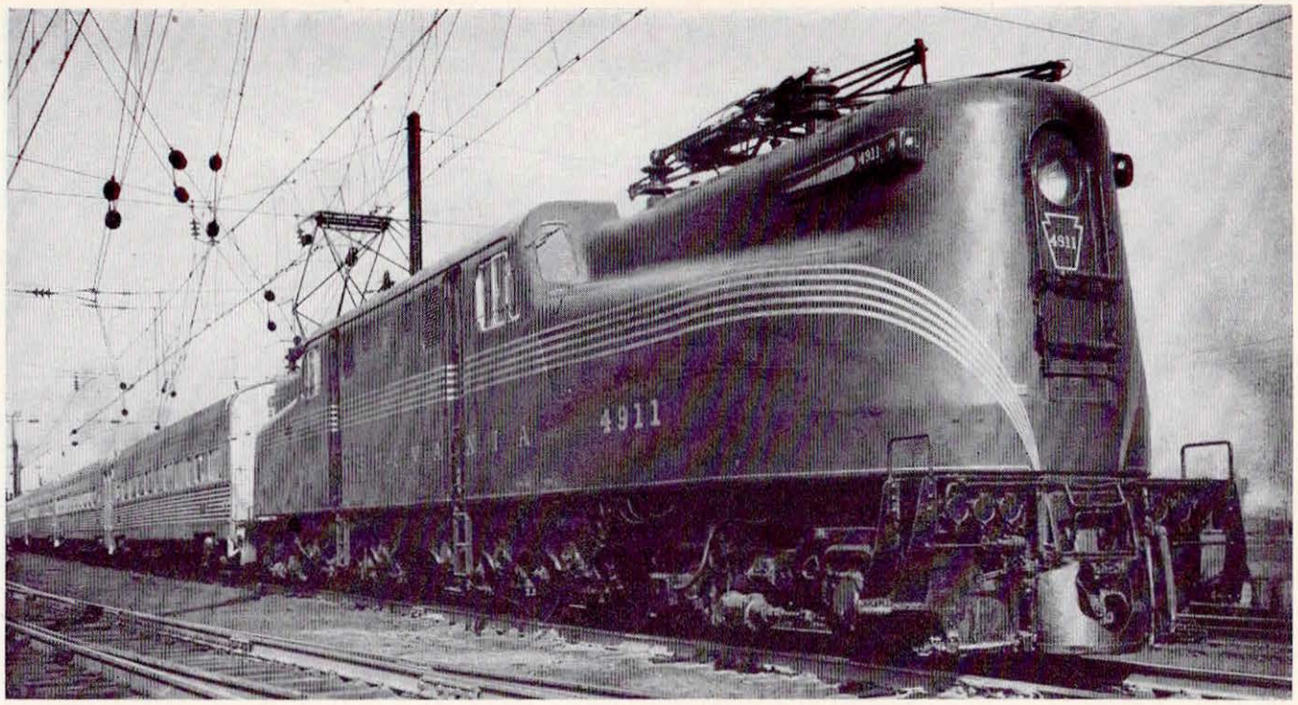


"A vision in cream and green, set off by touches of red and gold"—that was the "Congressional" at the turn of the century, because Frank Thomson had gone to Mexico in 1898.

Equipment, too, has been radically changed over the years. The first "Congressionals" consisted of baggage, parlor, dining and observation cars, all painted the then-standard Pullman black. In 1898, Frank Thomson, then president of the Pennsylvania, visited Mexico, where he saw the private train of Mexican President Diaz — "a vision in cream and green, set off by touches of red and gold." Mr. Thomson immediately ordered a similar color scheme for the "Congressional," and its specially painted cars provided a unique contrast with other trains until the present familiar Tuscan red, with gold trim, was adopted for all P.R.R. passenger trains. The new "Congressionals" and "Senator" are the first Pennsylvania-owned trains to appear in unpainted metal finish, though some of the road's cars in jointly equipped Florida trains have been left unpainted.

Originally, the "Congressional" was an all-parlor-car, extra-fare train; its first motive power, of course, was steam. The extra fare was dropped, and coaches were added, in 1931, and on February 10, 1935, the "Congressional" became the first train to operate through between New York and Washington by electric power.

The "Senator"—joint Washington-Boston operation of the Pennsylvania and the New Haven—is a much younger train; it was not established until July 14, 1929. But because its daily run is just about double that of the "Congressional," its aggregate mileage is already past 7,500,000.



One of the "Congressionals," newly equipped from end to end. The body color of the locomotive is Tuscan red. Striping and lettering are gold.

New Cars for the "Congressionals" And the "Senator"

Four systems of heating in Budd-built trains—Electric kitchens and radio telephone on each train

The 64 passenger-train cars delivered to the Pennsylvania by the Budd Company for the re-equipment of the "Congressionals" between Washington and New York and the "Senator" between Washington-New York-Boston are of Budd modified girder construction. They are designed for a minimum strength under compression load of 1,250,000 lb., applied at buffer-sill height, and of 1,000,000 lb. at the center line of draft, with collision posts designed to withstand 300,000 lb. applied 18 in. above the floor.

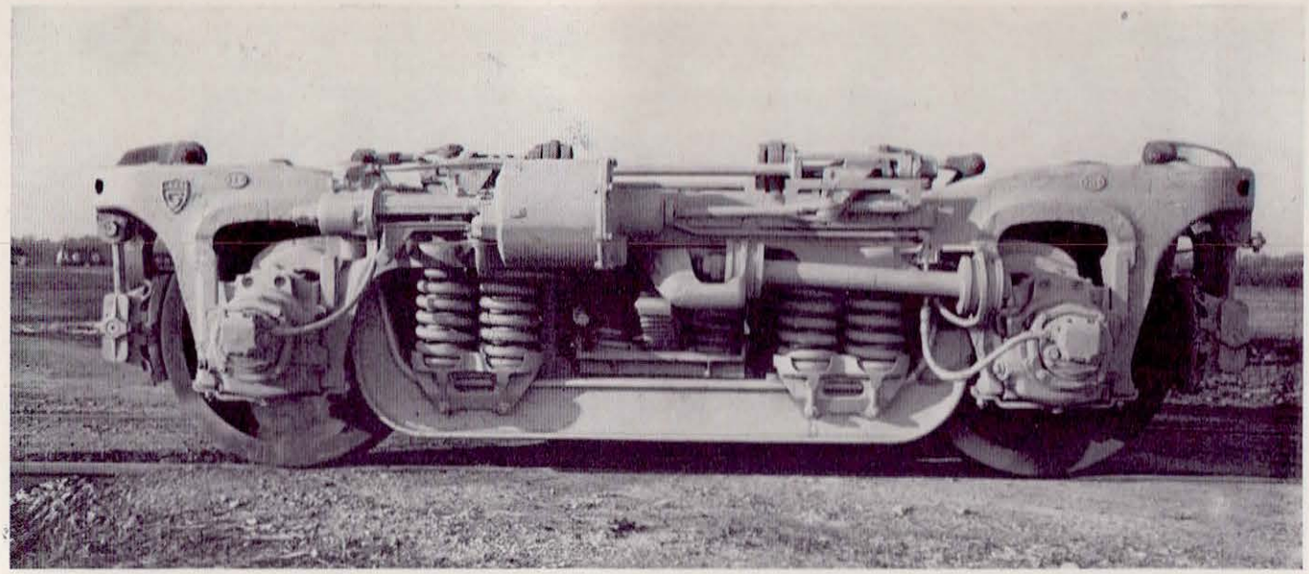
The cars are all 85 ft. long, coupled, and all are carried on four-wheel trucks. The weights are give in an accompanying table.

Outstanding among the technical features of this equipment are the electric kitchens in the dining, dining room and coffee shop cars. Adequate power is made available for the cooking as well as refrigeration, lighting and air-conditioning. Four systems of car heating are also installed on the various cars in these trains, two of which employ circulating hot liquids. End doors of all cars are operated by pneumatic door operators. The end dining room doors between the dining room and kitchen cars are sliding. The door engine for the dining room is controlled by a foot pedal in the floor.

Structural Details

In the construction of these cars particular attention has been paid to the comfort of the passengers. Insulation in the roofs, sides and floors of all cars is 3 in. thick. That in the 32 coaches is asbestos; that in the other cars, Fiberglas. An additional sound barrier consisting of 3 in. of the body insulation, compressed to 2 in., enclosed in a metallic cover, is applied to the under side of the floor pans over the trucks at both ends of the parlor cars, observation-parlor cars, dining room cars and all-drawing-room parlor cars, under the dining rooms of the coffee shop and dining cars, and under the lounge end of the kitchen-bar-lounge cars.

Ceilings, side walls and end walls in the coaches, lounges, dining and observation sections are finished with aluminum sheets, sound deadened with asbestos paper on the unexposed side. Perforated metal panels are applied to close the under side of the air ducts along



A truck showing the decelostat axle connections.

the center of the ceilings. These are hinged to facilitate servicing the wiring and cleaning the ducts.

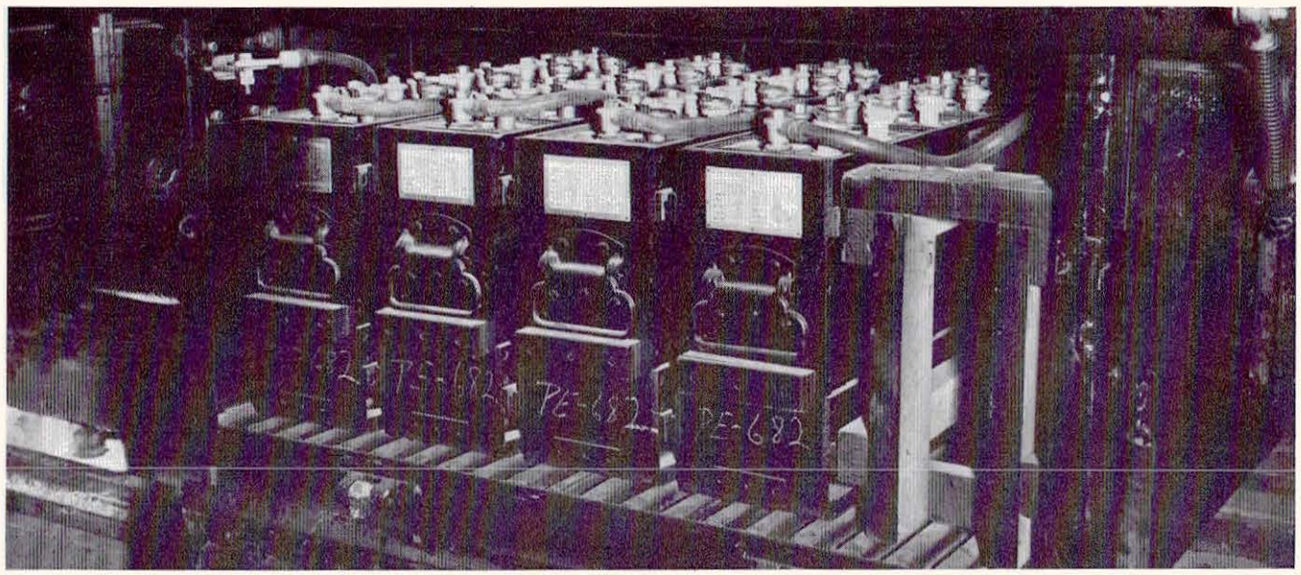
Partitions around kitchens and pantries and the wing partitions are built with frames of tubing closed with steel sheets on both sides. Partitions around washrooms, lockers, drawing rooms and conference rooms are of metal-faced plywood. All-electric lockers are lined with insulating board.

In all cars windows in areas occupied by passengers are 70 in. wide. Because coach passengers in two double seats sit alongside each window a center curtain guide is installed inside each coach window so that the shade over each half of the window is under the control of the passenger whose seat adjoins it. All windows are double-glazed breather type—including those in passageways in the interest of sound deadening. Inside panes are of laminated safety glass. Those outside are green-tinted heat-resisting glass. All sash are hinged according to Pennsylvania practice. Inside panes in toilets are laminated prism type. Mirrors on bulkheads and etched glass panels in wing partitions are also laminated safety glass.

All cars are equipped with electromechanical air-conditioning systems employing modulated control. On

Partial List of Materials and Equipment on the New Cars for the Pennsylvania "Congressionals" and "Senator"

Truck frame	General Steel Castings Corp, Granite City, Ill.
Axles, wheels	Bethlehem Steel Co., Bethlehem, Pa.
Center pin	M. H. Miner, Inc., Chicago
Equalizer; swing hangers	Canton Drop Forging & Mfg. Co., Canton, Ohio
Journal bearings	Timken Roller Bearing Co., Canton, Ohio
Side bearings	Budd Co., Philadelphia
Sound deadening (truck)	Fabreeka Products Co., Boston
Springs	American Locomotive Co., New York
Truck brakes	American Steel Foundries, Chicago
Brake system, end connections, back-up equipment, decelostats	Westinghouse Air Brake Co., Wilmerding, Pa.
End underframe	Youngstown Steel Car Corp., Niles, Ohio
Draft gear	Waugh Equipment Co., New York
Couplers	National Malleable & Steel Castings Co., Cleveland
Body insulation	(32) Johns-Manville, New York (32) Gustin-Bacon Mfg. Co., Kansas City
Sound deadening (framing)	J. W. Mortell Co., Kankakee, Ill.
Buffing mechanism	Budd Co., Philadelphia
Diaphragms; vestibule curtains	Morton Mfg. Co., Chicago
Generator, amplidyne booster, wire, transformers	General Electric Co., Schenectady, N. Y.
Generator drive	Spicer Mfg. Division, Dana Corp., Toledo, Ohio
Batteries	Thomas A. Edison, Storage Battery Div., West Orange, N. J. Electric Storage Battery Co., Philadelphia
Battery-charging and standby receptacles	Pyle-National Co., Chicago
Lamp regulator	Safety Car Heating & Lighting Co., New York
Train-line connectors	Joy Manufacturing Co., Pittsburgh
Fans and blowers	Trane Co., La Crosse, Wis. Westinghouse Electric Corp., Pittsburgh
Lining, electric lockers	Johns-Manville, New York
Lighting fixtures	Electric Service Mfg. Co., Philadelphia Luminator Co., Chicago
Air-conditioning equipment; food refrigeration	Frigidaire Div., General Motors Corp., Dayton, Ohio
Air diffusers	Pyle-National Co., Chicago
Filters	Air-Maze Corp., Cleveland
Heating equipment	Budd Co., Philadelphia Fulton-Sylphon Div., Knoxville, Tenn. Vapor Heating Corp., Chicago
End valves and connectors	Vapor Heating Corp., Chicago
Pipe covering	Johns-Manville, New York Union Asbestos & Rubber Co., Cicero, Ill.
Windows and window sills	Adams & Westlake Co., Elkhart, Ind.
Floor covering	Armstrong Cork Co., Lancaster, Pa.
Carpet	James Lees & Sons Co., New York
Curtain material:	
Inner face	Goodall Fabrics, Inc., New York
Outer face	Pantasote Co., New York
Curtain fixtures	Adams & Westlake Co., Elkhart, Ind.
Venetian blinds	Ajax-Consolidated Co., Chicago
Door operators	National Pneumatic Co., New York
Draperies; headrest covers; upholstery	Goodall Fabrics, Inc., New York
Plastic upholstery	E. I. du Pont de Nemours & Co., New York
Coach seats, parlor chairs, built-in seats	Heywood-Wakefield Co., Gardner, Mass.
Lounge chairs, vanity chairs, settees	General Fireproofing Co., Youngstown, Ohio
Lunch-counter stools	Chicago Hardware Foundry Co., Chicago
Dining chairs	Coach & Car Equipment Corp., Chicago
Bars; kitchens and pantries; steam table and coffee urn; broiler	Angelo Colonna, Philadelphia
Counter, bar and table tops	Formica Co., Cincinnati
Radarange	Raytheon Mfg. Co., Waltham, Mass.
Kitchen ranges	Hotpoint, Inc., Chicago
Smoking stands	Marshall Field & Co., Chicago
Fire extinguishers	C-O-Two Fire Equipment Co., Newark, N. J. Pyrene Mfg. Co., Newark, N. J.
Door and window glass	Pittsburgh Plate Glass Co., Pittsburgh
Etched glass and mirrors	Harriton Carved Glass Co., New York Oesterle Stained Glass Co., Philadelphia
Water coolers	Frigidaire Div., General Motors Corp., Dayton, Ohio Westinghouse Electric Corp., Pittsburgh
Paper-cup dispenser	Dixie Cup Co., Easton, Pa.
Hoppers	Crane Co., Chicago Duner Co., Chicago
Lavatories	Crane Co., Chicago
Towel and paper holders	Scott Paper Co., Chester, Pa.
Soap dispenser	U. S. Sanitary Specialties Corp., Chicago
Paints (interior)	Pittsburgh Plate Glass Co., Pittsburgh



An open battery box.

the all-drawing room parlor cars and parlor cars the system is limited to seven tons' capacity by reducing the speed of the compressor. On all other cars the capacity is eight tons. Compressor motors on the coffee shop, kitchen-bar-lounge and dining cars are single-speed, operating on 220-volt, 3-phase, 60-cycle alternating current and modulation is obtained by unloading two cylinders. The coaches, dining room cars, all-drawing-room parlor cars, parlor cars and observation-parlor cars have two-speed compressor motors operating on 100-volt direct current. Evaporators on all cars are sectionalized.

Air from all lounge rooms where there is smoking is exhausted by fan and does not recirculate. The balance between fresh air supply and exhaust from the kitchens is such that there is a slight flow toward these areas. The kitchens receive fresh air partly through the air-conditioning system and partly by blower from outside through ducts in the roof. This air is tempered in cold weather by a heater coil and delivered to several outlets in the kitchen and pantry. Air is exhausted from the pantry and kitchen by a blower above the kitchen range with branch ducts leading from other parts of the working area. The broiler has a separate blower and in the air duct to it is a grease filter. Air is also exhausted from above the bar in the kitchen-bar-lounge car, from the buffet and center bar areas of the dining-room car and from the buffet in the dining car.

Four Heating Systems

Four heating systems are employed in the cars in these trains, two using low pressure steam, and two using circulating liquid. The coffee shop, kitchen-bar-lounge and dining cars are heated by a system of hot water circulation developed by Vapor.

All cars have fin-tube radiation along the sides of the floor. Six-inch flashings are applied along the sides above the heater guards on all the cars in sections occupied by passengers or through which passengers pass.

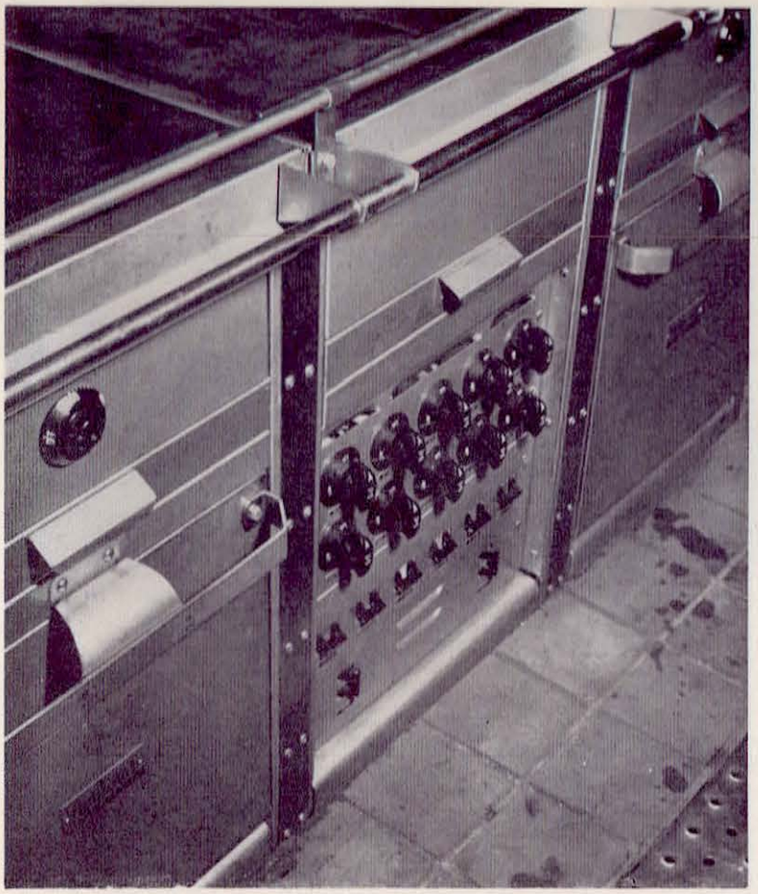
The heating system in the all drawing-room parlor cars is a development of the Budd Company, the objective of which is to achieve a maximum of reliability with a minimum of maintenance by simplifying the controls and reducing the number of component parts. In this case the base heat load for an average comfort-level temperature is furnished by the circulating fluid in the floor radiators and variations in room temperatures up or down from this level are effected by controlling the temperature of the overhead air admission to each room.

There are separate floor-heat circuits on each side of these cars and each is controlled by a separate differential thermostat, thus compensating for variations in the amount of heat transmission through the variations of solar effect on a car. The control panel is manually operated. There are two settings for cooling, one for heating and off.

Electrical System

The electrical system of the coaches, parlor cars, observation-parlor cars, the dining-room cars and the all-drawing-room parlor cars operates on nominal 110 volts d.c. with power furnished by a 25-30-kw. generator axle-driven through a Spicer drive and operated from standby power by a 25-hp. 220-volt, 3-phase a.c. motor. The batteries are of 510-amp. hr. capacity. A 5-kw. amplidyne booster inverter furnishes 220-volt 3-phase 60-cycle a.c. power for lighting, exhaust fans, blowers, refrigerators on the observation cars, electrical receptacles, and the public address system. Other electrical equipment, such as water coolers and certain types of fluorescent tubes, as well as razor outlets, etc., requires 115-volt single-phase a.c. power. This is obtained from ½-k.v.a. and 1-k.v.a. 230- to 115-volt single-phase transformers connected delta-delta, the size and number per car depending upon the load. The power for the cooking load and part of the refrigeration load on the coffee-shop, kitchen-bar-lounge and dining cars is 220-volt, 3-phase, 60-cycle. Battery-charging d.c. current at 32 volts is furnished by small generators directly connected to each alternator. The batteries are of 284 amp. hr. capacity.

Each of the kitchens has an electric range with six surface hot plates and two ovens. There is also a charcoal-electric broiler. In the counter section of the coffee-shop car the cooking facilities are a Radarange, an electric griddle, a two-burner electric hot plate, two four-slice



The electric range in the kitchen, showing the controls.

Radarange in the coffee-shop car.

toasters, a French fryer, and two electric coffee dispensers.

Most of the refrigeration throughout the train is electrically operated. Ice is used in the low refrigerators in the kitchen for fish and in the pantry which serves also for ice storage, and in the beer coolers at the bars. Frozen-food refrigerators are cooled by coils; others by forced-air evaporators.

Illumination

In general, with the exception of the all-drawing-room parlor car, the major illumination consists of 30-watt and 40-watt fluorescent tubes running in one or more continuous lines of fixtures along the ceiling. Within the same fixtures are 15-watt incandescent emergency lamps operating on either 110 volt or 32 volt d.c. power, which are spaced at regular intervals. In the event of failure of the a.c. power supply the incandescent lamp circuit is closed automatically by a relay, the coil of which is normally energized by the a.c. circuit.

In the coaches there are four lines of fluorescent tubes, one above each bagrack for ceiling illumination and one under each baggage rack. In the parlor cars two continuous lines of tubes are placed slightly to the right and left of the center of the ceiling.

In the dining cars the general illumination is furnished from cove lights. This is supplemented by 15-watt incandescent table lamps operating on 110-volt power. In the parlor sections of the observation-parlor cars the lights are placed along the ceiling similar to the parlor cars. In the lounge and observation sections of these cars the tubes are arranged along the sides of the ceiling in lensed glassware which directs high-intensity light to the reading, writing and card playing areas.

The coffee shop is lighted with continuous lensed glassware over the counter areas. In the dining section glareless lighting comes from continuous cornice fixtures.

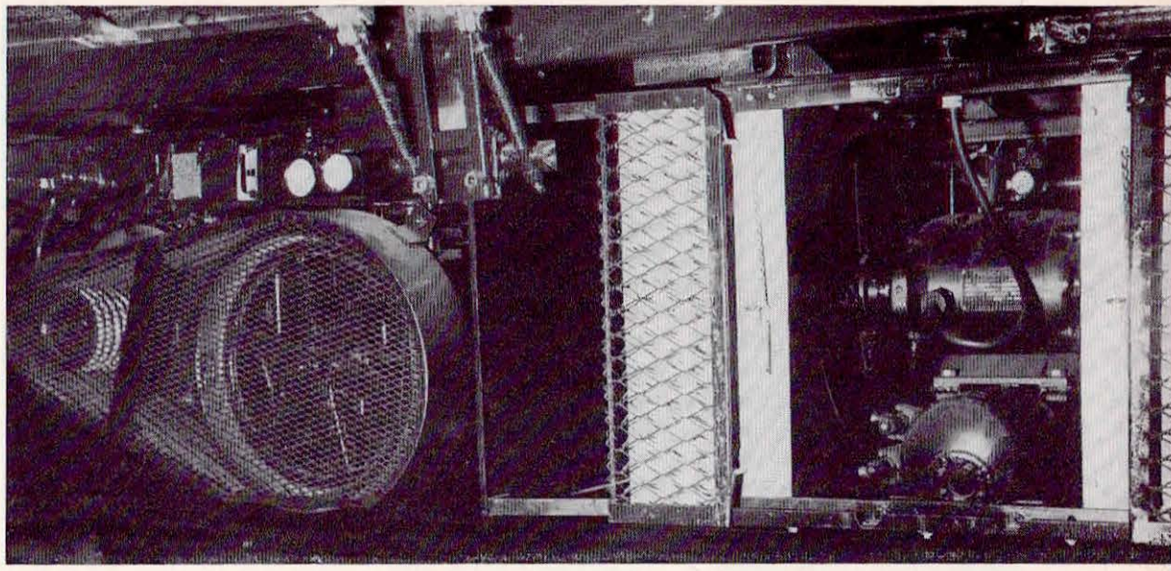
In the all-drawing-room parlor cars the lighting in each room consists of one Circline 32-watt 110-volt tube in the center of the ceiling and two 15-watt tubes in the reading-light fixture designed as an integral part of the baggage rack. Three separate similar tubes are placed in other locations.

Radio Telephone and P.A. Systems

Each train has a mobile radio telephone system. This is installed in the all-drawing-room parlor cars of the "Congressionals" and in the observation-parlor cars of the "Senator." The equipment, installed by the Bell Telephone System, includes a coin-box telephone, two antennas—one for receiving and one for transmitting—and a directory rack, with space for seven directories. These are for cities along the route.

Each train is equipped with a public-address system with stations in the coffee shop, dining and observation-parlor car. Speakers are installed in all cars.

All of the cars are equipped with Westinghouse HSC type air brakes with D-22-AB control valves. The cars are fitted for individual speed-governor control. All cars



Air-conditioning compressor and condenser mounted under the car.

Weights (Lb. Ready to Run) of the New Cars for the Pennsylvania

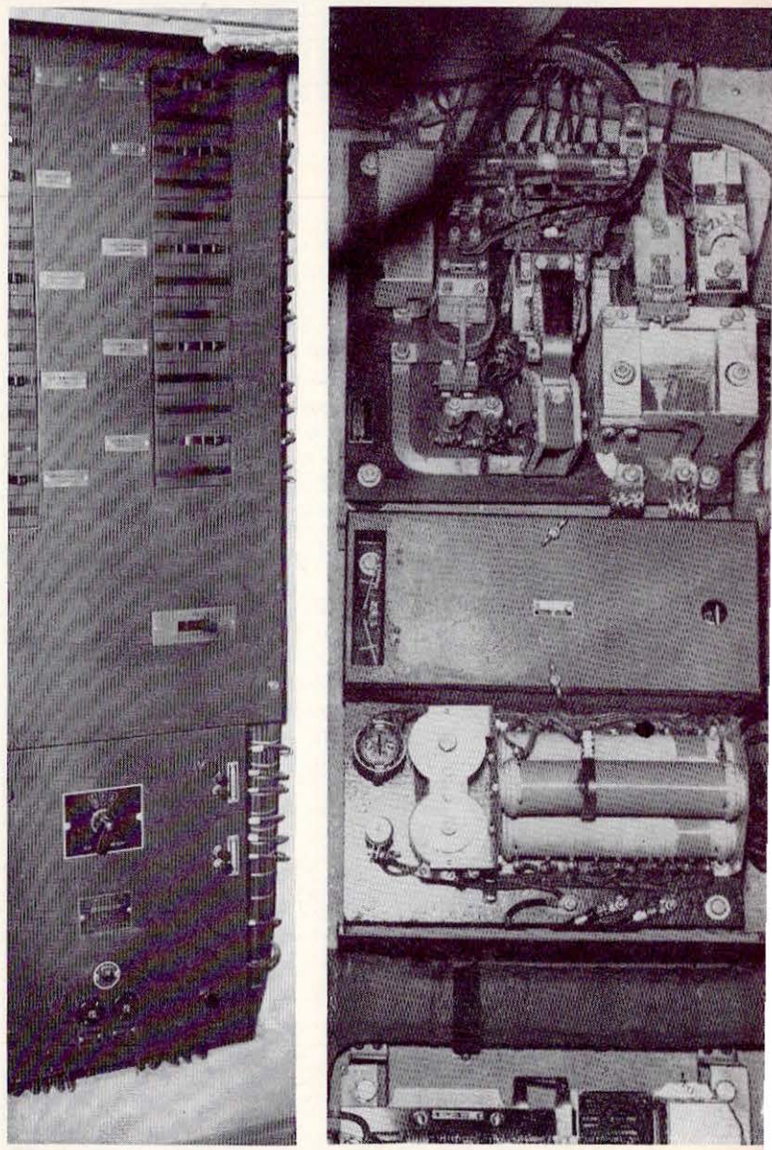
Dining-room car	86,570
Dining car	108,160
Coffee-shop car	106,060
Kitchen-bar-lounge car	115,340
All-drawing-room parlor car	90,450
Observation-parlor car with telephone room	89,450
Observation-parlor car	88,260
Parlor car	83,770
Coach	86,390

except coaches and parlor cars have decelostats applied to one end of each axle. Back-up equipment is installed in a cabinet at the rear end of each observation-parlor car.

Trucks are cast steel four-wheel type with 8-ft. 6-in. wheel base. The axles have 6-in. by 11-in. journals and are fitted with roller bearings with smoke- and stench-bomb hot-box alarm signals. There are single drop equalizers and combination coil and elliptic springs under the bolsters as developed by the Pennsylvania Railroad. The frames and bolsters are alloy steel castings. Wheels are 36-in. multiwear rolled steel. For sound deadening, composition pads have been placed under the side bearings, under the truck center plates, under the ends of the equalizers, at the equalizer spring seats and at the swing-hanger bearings. Rubber bumper pads cushion the ends of the bolsters.

The trucks have unit cylinder clasp brakes designed for a braking ratio of 250 per cent of the light weight of the car. They are operated by two cylinders on each truck. At 60 lb. brake-cylinder pressure the braking ratio is 150 per cent. Each car has one lever-type hand brake which is connected to both wheels on one side of one truck and designed to develop a braking ratio of 25 per cent or more of the total weight of the nominally loaded car.

All cars have tight-lock couplers. Rubber draft gears are installed throughout, except on the coupled ends of the dining-room car and the kitchen-bar-lounge car. Diaphragms are of the single-loop type. No outer diaphragms are employed except between the coupled ends of the dining room and kitchen cars. In addition to brackets for oil marker lamps, two red electric marker lights are built into the end sheets of each end of all cars except the coupled ends of the dining room and kitchen cars.



Left—Control locker in coach showing lighting, air-conditioning and radio controls. Right—A regulator locker.

N. C. Dezendorf Now Heads Electro-Motive

Although the "diesel revolution" is beyond the half-way mark on American railroads, he has no fear of a "saturated market"

Nelson C. Dezendorf

Paul R. Turner

On February 26, Nelson C. Dezendorf, director of sales of the Electro-Motive Division of General Motors Corporation, was named by G.M. President C. E. Wilson to assume leadership of that diesel locomotive-building organization, and on March 3 he was also elected vice-president of General Motors. Mr. Dezendorf's promotion came after a short term in the capacity of acting general manager following the untimely death of B. A. Dollens on February 9. Mr. Dollens had headed Electro-Motive since August 1950. (*Railway Age*, February 18, page 13).

With the dieselization of American railroads well beyond the halfway mark (as of last August diesel-electric locomotives were performing 53 per cent of freight gross ton-miles, 60 per cent of passenger train-miles and 66.5 per cent of switching-locomotive hours), it has become a rather common speculation that, even though allocations of materials currently are restricting locomotive production, sooner or later the builders will have "built themselves right out of their market." Because this thought has been expressed among both observers and members of the railroad industry, a *Railway Age* reporter "put it up" to Mr. Dezendorf in an interview following his appointment as general manager.

His first reply was a smile.

"We have studied the eventuality of full dieselization," he said, "but insofar as our production program is concerned, we don't contemplate its bringing on any abrupt or drastic changes, because there are many transitional factors involved.

"Railroad services should continue to expand because the nation itself is still expanding. Railroads that have been fully dieselized for several years still number among our best customers—for several reasons! They have found it expedient to acquire additional locomotives to handle traffic peaks; they have found need to build up a reserve for maintenance purposes; they have, in many cases, come to us for rebuilding of major components—diesel engines, generators and traction motors—and they have come to us for complete replacement of older model components so that earlier diesel locomotives may be "brought up to par" with those of more recent design. These two latter aspects of our business, plus our widespread parts service, have grown to the point that today they exceed the dollar volume of our locomotive sales of just six years ago.

"However there is no question that, as the railroads approach closer to full diesel operation, the production of new locomotives as we see it today will slacken. But we already have the growing parts and replacement service business to take up much of that slack and still more can be taken up if we carry out plans to build more of the *total* locomotive ourselves. Presently, nearly one-half the job is done by outside suppliers."

Mr. Dezendorf said that the market for switching locomotives would probably become "saturated" first—sometime within the next three or four years if present trends continue. But he emphasized again that "there are so many ways that we can continue to serve the railroads" that this eventuality is no cause for alarm.

He pointed, too, to the expanding production of diesel locomotives for service on railroads overseas. While such locomotives are not actually assembled at E.M.D.'s La-Grange (Ill.), Chicago and Cleveland plants, many of the component parts are built there. And this means still more grist for the Electro-Motive production mill because affiliates have recently been licensed to build E.M.D. locomotives in Australia, Belgium and Sweden. Consideration is being given too, to the appointment of a licensee in England. (The Canadian affiliate—General Motors Diesel, Ltd., of London, Ont.—is a part of the parent General Motors Corporation, not of the E.M.D. organization, but it, too, uses parts built in Electro-Motive's plants.)

Engineering, Finance and Sales . . .

Mr. Dezendorf has been with the Electro-Motive organization since June 1945 as director of sales. He brings to the post of vice-president and general manager a background combining engineering, sales and sales financing that he will find useful in the responsibility he has assumed. A native of Portland, Ore., he attended the University of Oregon and—after service in the Army during World War I—the University of California, where he graduated with an engineering degree. During his summer vacations he worked with a lumbering crew in Oregon and Washington forests. During 1920 and 1921 he was employed by the European Pacific Steamship Company making a survey of west coast and European port activities. He first entered the General Motors organization as an employee of the General Motors Acceptance Corporation at Portland in May 1922.

In 1927 Mr. Dezendorf became manager of the acceptance corporation's Seattle office. Subsequently he was transferred to the business development department in New York and in 1929 was placed in charge of that activity. He was elected a vice-president of G.M.A.C. in 1931 and in the following year was given a special assignment with the sales section of the parent corpora-

tion in Detroit. He returned to his former duties in the fall of 1933.

His close connection with the diesel locomotive business began shortly after he returned to New York in 1933. Here he initiated and directed a General Motors Acceptance Corporation plan for financing locomotive sales which proved highly effective during the early development period of Electro-Motive. On January 1, 1941, Mr. Dezendorf became a director and member of the executive committee of G.M.A.C., but he relinquished these positions on October 1 of that same year to become general assistant to R. H. Grant, who was then vice-president of General Motors in charge of distribution. When Mr. Grant retired in January 1944, Mr. Dezendorf became director of the distribution staff. It was from this position that he came to Electro-Motive in 1945 as director of sales.

Turner Succeeds Dezendorf

Paul R. Turner, eastern regional manager of the Electro-Motive Division, who has been appointed director of sales to succeed Mr. Dezendorf, is one of the senior members of the Electro-Motive organization.

Mr. Turner was born at Milan, Ohio, on March 30, 1896, and educated at the University School in Cleveland. He began his business career with the White Motor Truck Company in 1918, and served in White's national sales department at Denver and Omaha until 1922. In that year he left the White Company to go with H. L. Hamilton, then wholesale sales manager for White, who founded the Electro-Motive Engineering Company at Cleveland. In 1925 Mr. Turner established the Electro-Motive office in New York City, and has directed sales in the eastern part of the United States since that time.

JOHNNY B. CAREFUL GOES "POLITICAL" for this year's "Perfect Shipping Month" campaign. Many of the campaign posters and leaflets to be distributed to shippers and railroad personnel during April will be "sparked" by drawings of cartoonist Don Herold.

BENCH MARKS AND YARDSTICKS — 2

In last week's issue, page 35, was begun a serial discussion — of which these lines are a continuation — of the standards whereby performance in individual railroad positions and departments may be gaged. The hope is that, by thorough discussion, some general agreement may be reached as to what these standards ought to be. For example, *what are the characteristics of a good passenger conductor?*

A regional vice-president of a large railroad contends that it is not feasible to put a quantitative measure on this important job. You have, instead, to gage a man in this job by his "use of judgment in handling emergencies; discipline among his fellow crew-members; his pleasantness and patience with passengers; neatness of his dress; his behavior under stress." This vice-president says further that "the points I have mentioned are something beyond a measuring rod which can be compiled in the form of figures. Evaluation of the passenger conductor's performance is a job for a trainmaster who is himself skilled in appraising human values, without prejudice."

This vice-president believes, also, that a quantitative yardstick is impracticable for freight and passenger traffic representatives, because "conditions confronting one of these representatives on a given day may be quite different from those confronting other representatives on the same day." For example, "a representative may come in having sold 40 tickets or having secured a carload of freight after an hour of work, while another man may come in having sold only two tickets with four hours of work — yet the second man may have had a harder sales job to do than the first."

How about it, readers, do you agree with this vice-president, or not? We want your opinions and will withhold from publication your name and connections, unless you don't mind their being revealed. Address the editor at 30 Church street, New York 7.

Our own inclination is to suspect that it would be better not to have quantitative yardsticks at all than to put too much reliance in them, especially where they are oversimplified. For example, it doesn't mean too much to credit a freight representative with so many "carloads" — regardless of whether the traffic involved is remunerative or not and regardless of how the salesman got it. Also, whom he got it away from ought to be taken into account.

After all's said and done, though, oughtn't there be some fairly well recognized standards, quantitative or otherwise — which will be recognized both by those getting appraisal and those who do the appraising — whereby excellence or its opposite can be detected and rated? There surely must be some happy medium between no standards at all, on the one hand, and what is known as "railroading for the books" on the other.

Every railroad man, regardless of occupation, is a representative of his company merely by being on the payroll. If the railroad man is recognized as a good citizen in his off hours, oughtn't that also to count for something in measuring the adequacy of his overall performance?

T. A. Blair
President

Fifty-first convention of the American Railway Engineering Association shows advances in the science of constructing and maintaining the fixed plant are being made on broad front

C. J. Geyer
President-elect

A.R.E.A. Meeting Mirrors

If the strength and vitality of the American Railway Engineering Association can be considered a criterion of engineering progress on the American railroads—and there is no better criterion of such progress—railroad managements can relax in the knowledge that advances in the techniques of design, construction and maintenance of the fixed properties will at least keep pace with other aspects of railroading. This conclusion would be inevitable in the mind of any impartial observer attending the association's fifty-first annual convention last week at the Palmer House, Chicago.

Association Still Growing

That the A.R.E.A., as an organization, is continuing to advance all along the line was evidenced in the reports of President T. A. Blair, chief engineer system of the Atchison, Topeka & Santa Fe, and Secretary Neal D. Howard. Highlights of these reports are that the association's finances are sound; that the membership is continuing to grow (a net of 98 new members having been added during the past year to make a total of 3,190); that members are showing increased interest in the work of the committees—with 949 members now serving on committees as compared with 910 a year ago; that there was a substantial increase in the number of committee meetings held during the year; that work is proceeding on a project looking to the revision and republication of the association's Manual in 1953; and that the research activities of the association, in cooperation with the research staff of the Engineering Division, Association of American Railroads, were stepped up somewhat in 1951.

President Blair placed special emphasis on the growth and importance of the number of junior members in the association. He pointed out that this class of membership showed a net gain of 37 during the past year, giving a total of 257 juniors, or eight per cent of the total membership. "Your Board of Direction," he said, "considers one of its major obligations to be the development of plans which will give these juniors an opportunity to develop in association work as quickly as they acquire railroad experience." The Board of Direction, he said, requests that junior members and their supervisors watch for announcements of committee meetings to be held in their vicinity at a time they can be spared, and then to ask the committee chairman for permission to attend as visitors.

Specific figures on the research program, as given in the secretary's report and in an address by G. M. Magee, research engineer of the A.A.R. Engineering Division, showed that, while the 1951 research budget included 32 research projects estimated to cost $354,770, the approved budget for 1952 includes 34 projects estimated to cost $381,400. He explained that the more important research work carried out in 1951 was a continuation of the investigation of shelly spots in rails, of service and rolling load tests of the new joint bar design, of studies of fastenings and tie pads designed to reduce mechanical wear of crossties, and of tests on spring washers for crossing frogs.

Mr. Magee pointed out that considerable progress was made in the riding-comfort tests on curved track for modern types of passenger cars, that structural projects continued to be an important part of the research program, comprising 40 per cent of the activities, that the first report was made this year on the work on vegetation control by chemicals, and that the fourth year has been completed in the five-year crosstie research investigation.

The members were reminded by President Blair of "our obligations in connection with this research program." Pointing out that recommendations for research projects originate in the committees, he said that these committees have the responsibility to submit their recommendations for any research project that reasonably may be expected to result in economy to the railroads. After a research project has been initiated it becomes the duty of the committees and officers of the association, Mr. Blair added, to see that the project is conducted in such a way as to make available to the railroads information

C. G. Grove
Vice-president

G. W. Miller
Vice-president-elect

N. D. Howard
Secretary

Engineering Progress

that will be beneficial. "If we fulfill this obligation," he said, "and periodically analyze the methods of handling these projects, I am sure we will never lack for funds to carry on research."

Basically the annual convention of the A.R.E.A. comprises a medium for giving expression to the work done during the previous year by the association's technical committees, now numbering 22, including one special committee. This year a total of 15 addresses on subjects relating to the work of the committees were read in connection with their presentation. Some of the outstanding features of these reports and addresses are reported on following pages.

All sessions of the convention were presided over by President Blair, assisted by Secretary Howard and Vice-President C. J. Geyer, vice-president, construction and maintenance, of the Chesapeake & Ohio. Attendance included 1,188 members and 887 guests, a total of 2,075.

Election of Officers

The following officers were elected to direct the affairs of the association during the ensuing year: President, Mr. Geyer; and vice-president to serve for two years, G. W. Miller, engineer maintenance of way, Eastern region, Canadian Pacific, Toronto, Ontario.

The directors named were E. E. Mayo, chief engineer, Southern Pacific, San Francisco; S. R. Hursh, assistant chief engineer, maintenance, Pennsylvania, Philadelphia; Ray McBrian, engineer standards and research, Denver & Rio Grande Western, Denver; and M. H. Dick, engineering editor, *Railway Age*, Chicago. Members of the nominating committee are C. B. Porter, assistant chief engineer, Chesapeake & Ohio, Richmond, Va.; F. G. Campbell, chief engineer, Elgin, Joliet & Eastern, Joliet, Ill.; C. B. Harveson, chief engineer maintenance, Baltimore & Ohio, Baltimore; J. F. Marsh, engineer of bridges, Chicago, Rock Island & Pacific, Chicago; and A. B. Hillman, assistant chief engineer, Chicago & Western Indiana, Chicago.

In addition, C. G. Grove, chief engineer maintenance of way, Western region, Pennsylvania, Chicago, and vice-president of the association, was advanced automatically to senior vice-president succeeding Mr. Geyer.

The only features of the convention program not dealing directly or indirectly with the work of the association were two addresses, one prepared by J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R., whose subject was "The Impossible in Transportation—Can the Railroads Stage a Repeat Performance?", and one by F. G. Gurley, president of the Santa Fe.

Can They Do It Again?

Since Mr. Aydelott could not be present his address was read by Mr. Blair. He first reviewed "the miracle of transportation" performed by the railroads during World War II, pointing out the various measures that were taken by the railroads to increase the capacity of their facilities to handle an unprecedented volume of traffic in the face of serious obstacles imposed by adverse weather conditions and shortages of equipment and supplies.

To make it possible for them to stage a "repeat performance" in the event of another emergency, the railroads, said Mr. Aydelott, through concerted action following the outbreak of war in Korea, set out to complete a program of construction of new freight cars and locomotives to permit retiring old equipment worn out by extremely hard usage in World War II, while at the same time providing for an increase in the total ownership, now below that of VJ-Day, in the amount of 125,000 cars.

The completion of such a program would provide, in the opinion of the railroads, for anticipated military and civilian needs for transportation in a perod of total mobilization, granting that new car construction sufficient to offset normal retirements would be carried on regardless of the war effort.

Mr. Aydelott reviewed the considerations that led to the decision of the railroads to add to their freight car ownership when trouble broke out in Korea. These included, he said, recognition of the population growth of the country, the expansion of industry in all areas of the nation, and the need for making provision for transporting larger and heavier machines of war than had

THE BOARD OF DIRECTION of the American Railway Engineering Association in session on March 10, a day before the opening of the convention. Reading clockwise around the table are Nancy Campbell, stenographer; N. D. Howard, secretary; G. W. Miller, engineer maintenance of way, Eastern region, Canadian Pacific; C. B. Bronson, maintenance-of-way assistant to vice-president, New York Central system; A. B. Chapman, assistant engineer, Chicago, Milwaukee, St. Paul & Pacific; L. L. Adams, chief engineer, Louisville & Nashville; R. J. Gammie, chief engineer, Texas & Pacific; W. J. Hedley, assistant chief engineer, Wabash; H. S. Loeffler, assistant chief engineer, Great Northern; T. A. Blair (president), chief engineer system, Atchison, Topeka & Santa Fe; C. J. Geyer (senior vice-prsident), vice-president, construction and maintenance, Chesapeake & Ohio; C. G. Grove (vice-president), chief engineer maintenance of way, Western region, Pennsylvania Railroad; G. M. O'Rourke, assistant engineer maintenance of way, Illinois Central; W. C. Perkins, chief engineer, Union Pacific; F. S. Schwinn, assistant chief engineer, Missouri Pacific Lines; I. H. Schram, chief engineer, Erie; A. N. Laird, chief engineer, Grand Trunk Western; E. G. Gehrke, assistant secretary; Norris V. Engman, assistant to secretary. Not present were R. P. Hart, chief operating officer, Missouri Pacific lines; Clark Hungerford, president, St. Louis-San Francisco; and J. D. Moffat (treasurer), chief engineer, Western region, Pennsylvania.

to be handled during World War II. "A paradoxical situation would be created," he said, "if the steel industry, after expanding its capacity to meet the needs of the munitions program, should have its finished materials delayed in shipment by a car shortage; yet, this is a prospect unless production authorities permit more steel to be supplied for building new cars."

Failure to allot sufficient quantities of steel to support the railroads' car-building program, according to Mr. Aydelott, has caused it to be curtailed to the point where volume of new car construction for the remainder of the year may be little more than that required for replacement of cars retired in service.

"We may in the next war," continued Mr. Aydelott, "be under enemy air attack for the first time, and transportation miracles such as World War II produced should not be contemplated in our planning. With a greatly expanded steel industry and with the facilities available to build all new cars and locomotives which the railroads are seeking to acquire, good judgment would seem to indicate that the fullest possible production of this equipment should be had while we are still at peace."

Challenge for Engineers

In his address at the annual luncheon, which was attended by a record gathering of 1,256 persons, Mr. Gurley stated at the outset that he adopted the title, "Engineers Should Do More and Do It Better," in the belief that "it would attract your attention, arouse your interest, even, perhaps, your mild anger." His intention, he said, was "to express appreciation for the many contributions you have made to your industry, while at the same time endeavoring to demonstrate you have missed some opportunities." He hoped also not only to "point out where you can make other contributions to your industry," but to "delineate how the trained and logical mind of the engineer can and should do more in the protection of the very house in which he lives and in which he has had such a great opportunity to demonstrate his ability."

Mr. Gurley challenged his listeners to make a list of the five most important things which should be done to improve their particular railroads and then to answer for themselves various questions bearing on the reasons why these objectives have not been attained. He hoped that this line of thought would stimulate engineers "to approach more aggressively the hurdles standing between your ambitions and your accomplishments."

In Mr. Gurley's opinion the engineer, in addition to the duties of designing and building structures, should be considered a member of the staff which administers the business. The responsibilities inherent in such a position would, he thought, necessitate "a breadth of viewpoint which by its very nature will stimulate one's imagination and enlarge this perspective." In this broader role the engineer, said Mr. Gurley, would be more inclined to study the underlying reasons why other forms of transportation are securing business that logically should move by rail, and through such groups as the A.R.E.A. would endeavor to focus "a sharp spotlight upon the foundation and framework so that you may know about its conditions."

Railroad men visiting the convention had an additional incentive for being at Chicago last week. This was the huge display of manufacturers' products staged at the Coliseum by 119 companies under the sponsorship of the National Railway Appliances Association. A more complete story on the exhibit, plus an account of the annual meeting of the N.R.A.A., will be found later in this issue.

A. R. E. A.
Chicago Convention . . .

Highlights of Technical Sessions

A summary, by subject matter, of important points and information brought out in the committee reports and addresses presented at last week's meeting

Partial view of the National Railway Appliances Association exhibit at the Coliseum.

It is doubtful if very many members of the A.R.E.A. have read *all* of the committee reports printed in A.R.E.A. Bulletins 495 to 500, inclusive, which were issued prior to last week's convention. Such doubt is understandable, because these reports occupied 950 pages of printed text matter in the six bulletins.

But these reports have a deep significance for every railway engineering officer and his management because, for all practical purposes, the recommended practices and specifications contained in them become, when adopted, the criteria for standard practices on most railroads in this country, and on some in other countries. Each report represents the best judgment and effort of a group of competent engineers—and their conclusions are not reached hastily.

This mass of text matter was produced by the association's 21 standing committees and one special committee from their studies and investigations of problems pertaining to railway location, construction, operation and maintenance. Reports were submitted on 112 out of a total of 182 assignments. A total of 29 of these reports dealt with proposed changes in the Manual and are summarized separately in these pages.

For those who are primarily concerned with track, the highlights of the reports on Roadway and Ballast, Ties, Wood Preservation, Rail, Continuous Welded Rail, Track, Economics of Railway Labor, and Maintenance of Way Work Equipment are of special interest.

Reports on Roadbed Grouting

In the Roadway and Ballast report the merits of grouting are discussed by two subcommittees. One of these presented a fourth progress report on a test installation of pressure-grouted roadbed on the New York Central, which is being observed by the research staff of the Engineering Division, A.A.R. The subcommittee report on this test asserted that the apparent effect of grouting is in all cases to reduce pressure intensities. The other subcommittee, in addition to submitting basic material on good practices to be observed when stabilizing track through pressure grouting, presented two tabular statements on the maintenance costs of installations on 17 railroads, as well as a fourth progress report of the laboratory investigation of roadbed stabilization being conducted under the direction of Dr. R. B. Peck at the University of Illinois.

What's Being Done About Brush?

Tests being conducted by the research staff of the A.A.R. Engineering Division on brush and weed control were the subject of a report by the Roadway and Ballast committee. This report, in two parts, included a description of an extensive brush-killing project on the Western Maryland through mountainous country where brush killing was difficult, and followed with an initial report on a weed-control research project under way at Ames, Iowa, with various chemicals and chemical combinations.

The treatment used for weed control at Ames can be divided into four groups, which were used alone and in combination. These were: (1) dry materials, including Borascu and pelleted arsenic trioxide; (2) oils, including diesel fuels, distillates, and residual fuels; (3) fortified oils, including medium aromatic content oils fortified with dinitro, pentachlorophenol, trichloracetic acid, or 2, 4-D compounds; and (4) water solutions and emulsions, including 2, 4-D, chlorates, polyborchlorate, trichloracetates, chlorophenyl-dimethylurea, isopropyl-phenylcarbamate, etc. The first aim of these tests is to try out a large number of combinations to obtain preliminary indications of the most promising treatments. Quite a bit was learned from the 1951 test plots and the committee reported that further tests with the same and new chemicals, used separately and in combination, as well as repeat applications, are contemplated.

The cost and economies of weed eradication were the subject of a report of the Committee on Economics of Railway Labor. This report dealt with the control of weeds within the roadbed shoulders, and especially the ballast section. It described the use, cost, number of applications, and effectiveness of ballast diskers, on-

AT THE A.R.E.A. CONVENTION—F. D. Day, Pennsylvania; J. W. Reed, assistant engineer, Pennsylvania; J. A. Jorlett, assistant engineer, also of the Pennsylvania.

R. E. Butler, vice-president and superintendent; G. R. Wintrich, chief engineer —both Newburgh & South Shore.

track weed mowers, flame weed burners, oil weed killers, and chemical weed killers.

No Substitute Ties for U. S.

A report of the Committee on Ties threw a dash of cold water on hopes that a cheaper and more durable material could be found as a substitute for wood ties. This subject is like the corpse that won't stay dead. For many years (1878 to 1940) it was a live subject. A total of 61 railroads in the United States and Canada experimented with 94 different makes of tie substitutes. These included ties made from cast iron, cast steel, steel, concrete, concrete and steel, steel rails and concrete, steel and wood, scrap rails, and similar combinations. The last previous report on this subject was made by the Ties committee in 1940 and, for the most part, the remarks made then by the experimenters on the performance of the substitutes seemed to mark this subject for interment.

However, there were a number of these substitute ties that had then not been in service long enough to evaluate them, so the Ties committee presented a report this year to bring the statement of service performance on the majority of these installations up to date. The committee reported that practically all of the original test installations of these ties have now been removed and, as far as it was able to determine, no new installations have been made. In general, it announced, the results of the tests were unsatisfactory and none of the substitute ties was adopted by any road.

Can Ties Be Made to Last Longer?

Lacking satisfactory tie substitutes, can the service life of wood ties be extended? The answer to this unquestionably is "yes," and that is exactly what the Ties, Wood Preservation, and Track committee are now working on. It is the general opinion that manufacturers of wood preservatives have treatments that will endow wood with a longer service life than the average of 22 years now being realized from crossties. The main troubles are mechanical wear, splitting, chemical deterioration of the wood fibers under the tie plates, and spike killing, and if these problems can be whipped, some authorities are of the opinion that ties can be made to last at least 35 to 40 years.

No reports were submitted by the Ties committee on its assignments for investigating the use of bituminous coatings of ties for protection from the elements or for methods of retarding splitting and the mechanical wear of ties, including the stabilization of wood. However, the A.A.R. is collaborating with the National Lumber Manufacturers' Association on research in this field. The progress of this work was described in an address by G. M. Magee in which he announced that the most important development relative to this project during 1951 was the experimental treatment of ties for service-test installations by means of a one-step seasoning and treating process developed in the investigation. He also announced that work was completed leading to the most efficient design of a laminated tie, and that exposure tests were augmented and continued on surface coatings to protect ties from checking and splitting.

Artificial Methods of Seasoning

The Wood Preservation committee is working on a project to extend the service life of ties by finding better methods of treating and handling them. This committee reported on the new incising and end-ironing tests that have been started with crossties treated with a 60/40 creosote-coal tar solution and installed on the Erie during 1951. Progress in its work of revising the specifications of creosote was reported.

Perhaps the highlight of this committee's report was the announcement of two artificial methods of pretreatment seasoning of forest products. One method, termed controlled air seasoning, was described as drying wood under conditions of temperature and relative humidity that fall within the range of natural air seasoning or atmospheric conditions. This process automatically maintains favorable temperature and relative humidity conditions, with mild drying conditions used for green wood to prevent excessive checking. As drying takes place, more effective seasoning conditions are imposed. The committee reported that Southern pine members, particularly poles, were conditioned for treatment with this method in from one to two weeks with the original moisture content, ranging from 65 to 90 per cent, being reduced to 30 to 40 per cent in that time, while the moisture content of lumber 3 to 4 in. in thickness was reduced to less than 20 per cent during similar periods.

The other method mentioned is the one-step seasoning and creosoting process, described by Mr. Magee, the object being to treat ties while green, thus eliminating

E. Osland, office engineer, Atchison, Topeka & Santa Fe; R. J. Gammie, chief engineer, Texas & Pacific; S. H. Poore, assistant engineer, Chesapeake & Ohio.

J. C. DeJarnette, Jr., chief engineer; J. A. Blalock, division engineer—both R.F. & P.

the seasoning period, by adding a chemical to the creosote solution that is miscible with water, thereby attracting water from the wood cells into the solution, replacing it with creosote. This method was reported still in the development stage, with no technical information released for publication to date.

The Track committee is seeking ways to prolong tie life through tests on hold-down fastenings and tie pads. But those maintenance men who are eagerly awaiting results from the tests on the Louisville & Nashville and on the Illinois Central with various types of hold-down fastenings and tie pads, in collaboration with the Ties committee, will need to relax, because it was reported that, unless the rate of plate cutting is greatly accelerated in the future, it may require a total service period of about 10 years before tentative conclusions can be made as to the relative effectiveness of the hold-down fastenings. Since the test installations were begun in 1947, it will be several years before definitive conclusions can be expected. However, the Track committee reported that, although tie abrasion has been quite small, the measurements made in 1950 do indicate that the ties in the sections with the special hold-down fastenings show less wear than those in the sections having only cut spikes.

As to tests of tie coatings and adhesives, the Track committee asserted that they have not progressed sufficiently to warrant a statement as to the effectiveness and economy of the various types.

While discussing the prolongation of tie life, the tests being conducted by the Track committee for its investigation on the designs of tie plates are not to be overlooked because the penetrations of those plates into the ties are being closely observed. This year the committee reported on the seven designs of tie plates having a base width of 6 in., which were installed on the Southern in November 1944, and were inspected after 6½ years of service and after carrying 139 million gross tons of traffic. It was reported that the average penetration values are still too small in magnitude to show the effect of the design features, but the longer plates show a little more penetration than the shorter ones.

Preventing Frozen Joints

Many deficiencies of the various types of lubricants or rust preventives were detected during a six-year test on the Burlington by the Track committee in its investigation of the effects of lubrication in preventing frozen rail joints. Because new types of rust preventives have been developed since the Burlington tests were initiated, and other methods of application, with or without end plugs, have been improved and used, the committee made a second test installation, this time on the Illinois Central when that road laid 132-lb. RE rail in June 1950.

In connection with the Burlington tests, the committee submitted a final report on rail-gap width, pull-in of joint bars, and maintenance-of-way service of joint bars. The results of the bolt-tension tests on these same sections were reported on last year. In this year's report the committee said, in general, the several kinds of lubricants were not effective in reducing joint wear or pull-in to a significant amount. The reduction of pull-in was found to be greater with headfree bars, but the amount was small in comparison to the total available take-up of that design of the bar. The greatest benefit derived from the better kinds of lubricants or rust preventives, the committee said, was in arresting corrosion and the prevention of hard rust slabs forming in the lower rail fillets at the ends of the joint bars.

From tests with brushed-on lubricants, it found that there was a definite need for plugging the ends of the bars (1) to prevent formation of the hard rust slabs and the collection of debris which retains moisture and accelerates corrosion, (2) to keep out brine, and (3) possibly to increase the service life of the rust preventive by shielding it from elements.

Ground Easements Look Promising

The Rail committee is following various avenues of investigation in an effort to produce more durable joints. It is trying out various types of 36-in. and 39-in. joint bars with different bolt spacings for 115-lb. and 132-lb. rails, pressed and ground easements, and cold-worked bars. It was observed that rail gouging was reduced on those bars having pressed easements, that bars with the top fishing surface cold worked withstood more rolling-load cycles before failure than those not cold worked, that ground easements in the top fishing surface increased their rolling load cycles before failure, that two bars having easements carried completely over the top surface increased the rolling-load cycles slightly over four times before failure, and that, in general, laboratory tested bars with a surface hardness below 200 Brinnell show a lower fatigue life than bars over 200 Brinnell.

It was emphasized that rail ends must be ground or

I. H. Schramm, chief engineer, Erie; P. L. Schultz, superintendent rail mill, Atchison, Topeka & Santa Fe; M. J. Zeeman, engineer of track design, also A.T. & S.F.

C. H. Mottier, vice-president and chief engineer, Illinois Central; A. C. Clarke, chief engineer, Baltimore & Ohio.

beveled to eliminate burrs which often cause high bearing pressures and failures of the joint bar. Tests to determine the effect of decarburization of pressed easement versus a ground easement are planned as is a service test installation of quenched and tempered joint bars.

Russell S. Jensen, research assistant professor of theoretical and applied mechanics of the University of Illinois, who is in charge of a laboratory investigation of joint bars, gave an illustrated lecture on this subject. He described the tests made with non-heat-treated bars, bars oil-quenched before the critical temperature at 1,350 deg. F., bars oil-quenched above the critical temperature from 1,550 deg. F., bars oil-quenched at 1,550 deg. F. and tempered at 800 deg. for one hour, and bars water-quenched at 1,550 deg. F. and tempered at 1,000 deg. F. for one hour.

Of these, the bars oil-quenched above the critical temperature from 1,550 deg. F. and not tempered appeared to give the best performance.

Better mill practice is reported by the Rail committee to be gradually reducing the number of transverse fissures in rails, although 17 new ones were reported by Professor R. E. Cramer of the University of Illinois to be among the 52 control-cooled rails that were sent to the laboratory at that University for investigation. There were four transverse fissures from shatter-cracked rail which he said represented improper control cooling, and seven fissures from hot torn steel, which were said to represent an improvement in mill practice of controlling the reheating of the rail steel blooms. Four other fissures weer attributed to hand-made gas butt welds, and Professor Cramer added that experience seems to indicate that this type of weld is subject to failure from defects produced during the hand welding operation. As control-cooled rails continue to receive more service in track, there are more failures developing which are classified as detail fractures from shelling—16 being reported among the 52 rails tested.

All things considered, the Rail committee asserted that the control of the transverse-fissure problem that is being obtained is very gratifying.

Welded Rail a Live Subject

Whenever rail comes up for discussion, probably the liveliest topic is the cost, performance and practicability

Committee Chairmen Listed

Here is a list of the 21 A.R.E.A. standing committees, and its one special committee, giving the chairman and vice-chairman who were in charge of each committee's work during the past year. Directly following the close of the convention seven of the chairmen (each indicated by an asterisk), having served for the regular three-year period, relinquished their duties, and the chairmanship in each case was assumed by the vice-chairman. The list follows:

Roadway and Ballast—G. W. Miller (chairman), engineer maintenance of way, Eastern region, Canadian Pacific, Toronto; B. H. Crosland (vice-chairman), assistant chief engineer, Eastern district, St. Louis-San Francisco, Springfield, Mo.

Ties—B. D. Howe* (chairman), chief lumber inspector, Louisville & Nashville, Louisville, Ky.; P. D. Brentlinger (vice-chairman) forester, Pennsylvania, Philadelphia.

Rail—Ray McBrian* (chairman), engineer of standards and research, Denver & Rio Grande Western, Denver; C. J. Code (vice-chairman), engineer of tests—maintenance of way, Pennsylvania, Philadelphia.

Track—F. J. Bishop (chairman), chief engineer, Akron, Canton & Youngstown, Akron, Ohio; L. L. Adams (vice-chairman), chief engineer, Louisville & Nashville, Louisville, Ky.

Buildings—J. B. Schaub (cnairman), assistant engineer buildings, Illinois Central, Chicago; O. W. Stephens (vice-chairman), assistant to chief engineer-maintenance, Delaware & Hudson, Albany, N. Y.

Wood Bridges and Trestles—C. H. Newlin (chairman), supervisor bridges and buildings, Southern, Bristol, Va.; W. C. Howe (vice-chairman), engineer bridges and buildings, Bessemer & Lake Erie, Greenville, Pa.

Masonry—C. B. Porter* (chairman), assistant chief engineer, Chesapeake & Ohio, Richmond, Va.; W. R. Wilson (vice-chairman), assistant engineer, Bridge Department, Atchison, Topeka & Santa Fe, Chicago.

Highways—W. H. Huffman (chairman), division engineer, Chicago & North Western, Chicago; Bernard Blum (vice-chairman), chief engineer, Northern Pacific, St. Paul, Minn.

Records and Accounts—Louis Wolf (chairman), assistant engineer, Missouri Pacific, St. Louis; H. N. Halper (vice-chairman), valuation engineer, Erie, Cleveland.

Water Service and Sanitation—G. E. Martin (chairman), superintendent water service, Illinois Central, Chicago; H. L. McMullin (vice-chairman), engineer water supply, Texas & Pacific, Dallas.

J. R. Rushmer, system roadway engineer, Santa Fe; J. E. Fanning, assistant to chief engineer, Illinois Central; G. M. O'Rourke, assistant engineer maintenance of way, Illinois Central.

H. R. Clarke, chief engineer, Burlington; F. J. Bishop, chief engineer, Akron, Canton & Youngstown.

of continuous welded rail. A large amount of information on this subject was found in the report of the Special Committee on Continuous Welded Rail. This is a progress report confined to the oxyacetylene pressure-welding process. It describes fabrication, laying, related fastenings, and maintenance of continuous welded rail. Next year the committee hopes to submit a final report on all phases of this subject as well as facts on the economies of using continuous welded rail.

Building Up Engine Burns

A final report by the Rail committee summarized its laboratory and field experience relative to the building up of driver burns by welding. The committee believes the tests have proved the desirability of repairing engine burns by this method rather than leaving them in the track unwelded. Reported benefits from welding are said to be: (1) Elimination of undesirable microstructure and quench cracks, which serve as potential stress raisers; (2) elimination of low spots on the rail surface which affect the smoothness of the rail and concentrate service impacts at the very point in the rail which has been weakened metallurgically; and (3) through building up of engine burns the recovery of much rail for main-line use which would otherwise be scrapped or consigned to secondary service.

Shelly Rail Probe Intensified

Shelly rail, if not the No. 1 incorrigible, is high on the list because it was already being investigated by four groups of engineers. Now a fifth investigating group has been initiated. This one, under the direction of Professor M. M. Frocht of the Illinois Institute of Technology, will conduct an analysis of the stresses produced in the gage corner of a rail by a wheel.

The fourth group, under the direction of Professor Cramer of the University of Illinois, submitted a tenth progress report on shelly rail studies. Rolling-load tests on two specimens of manganese-chrome-vanadium alloy rails, it reported, indicate that these alloy rails may be several times as good as standard carbon rails. Similar tests on a heat-treated standard carbon rail indicate that this type of rail is as good as manganese, chrome, vanadium alloy rails. However, rolling-load tests on high

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Yards and Terminals—W. H. Giles* (chairman), assistant chief engineer, system—construction, Missouri Pacific, St. Louis; J. E. Hoving (vice-chairman), special engineer to the president, Northern Pacific, St. Paul, Minn.

Iron and Steel Structures—J. L. Beckel (chairman), assistant engineer of structures, New York Central, New York; J. F. Marsh (vice-chairman), engineer of bridges, Chicago, Rock Island & Pacific, Chicago.

Economics of Railway Location and Operation—J. W. Barriger (chairman), president, Chicago, Indianapolis & Louisville, Chicago; H. B. Christianson, Jr. (vice-chairman), assistant engineer, Atchison, Topeka & Santa Fe, Chicago.

Wood Preservation—G. B. Campbell* (chairman), tie and timber agent, Missouri Pacific, St. Louis; W. F. Dunn, Sr. (vice-chairman), tie and timber agent, Southern, Washington, D.C.

Contract Forms—L. A. Olson (chairman), assistant engineer-bridges, Chesapeake & Ohio, P. M. District, Detroit; G. W. Patterson (vice-chairman), assistant to chief engineer, Pennsylvania, Western region, Chicago.

Economics of Railway Labor—H. E. Kirby* (chairman), cost engineer, Chesapeake & Ohio, Richmond, Va.; R. J. Gammie (vice-chairman), chief engineer, Texas & Pacific, Dallas.

Cooperative Relations with Universities—C. G. Grove (chairman), chief engineer maintenance of way, Western region, Pennsylvania, Chicago; R. J. Stone (vice-chairman), vice-president, St. Louis-San Francisco, St. Louis.

Maintenance of Way Work Equipment—R. K. Johnson (chairman), superintendent work equipment and reclamation, Chesapeake & Ohio, Barboursville, W. Va.; C. E. Morgan (vice-chairman), superintendent work equipment and track welding, Chicago, Milwaukee, St. Paul & Pacific, Chicago.

Clearances—A. R. Harris (chairman), engineer of bridges, Chicago & North Western, Chicago; A. M. Weston (vice-chairman), senior assistant engineer, Baltimore & Ohio, stationed at Baltimore.

Waterproofing—R. L. Mays* (chairman), division engineer, New York, Chicago & St. Louis, Frankfort, Ind.; T. M. von Sprecken (vice-chairman), assistant to chief engineer, Southern, Washington, D.C.

Impact and Bridge Stresses—J. P. Walton (chairman), engineer of bridges and buildings, Western region, Pennsylvania, Chicago; E. S. Birkenwald (vice-chairman), engineer of bridges, Southern, Cincinnati, Ohio.

Special Committee on Continuous Welded Rail—H. B. Christianson (chairman), assistant chief engineer, Chicago, Milwaukee, St. Paul & Pacific, Chicago; L. F. Racine (vice-chairman), chief engineer, Chicago, Indianapolis & Louisville, Lafayette, Ind.

C. F. Thomas, secretary and chief engineer, Spokane, Portland & Seattle; F. G. Simmons and Kenneth Cavins, both Fairmont Railway Motors, Inc.; W. R. Bjorklund, principal assistant engineer, Northern Pacific; Bernard Blum, chief engineer, Northern Pacific; W D. Brooks, Fairmont Railway Motors.

B. A. Bates, general industrial agent, C. of Ga.; L. W. Funk, assistant chief engineer, A.C.L.; G. H. Echols, chief engineer maintenance of way and structures, Southern.

silicon rails, nickel alloy bars and rails, and flame-hardened rails produced no results comparable with the manganese-chrome-vanadium alloy steel or the heat-treated standard carbon steel rails for resisting shelling.

A rolling machine of new design, Professor Cramer reported, has produced some failures which resemble typical detail fractures from shelling, and preliminary tests have established that the bending of the rail is an important factor in the development of detail fractures.

Two Rail Sections Set for Awhile

Much time of competent men is almost always being spent on new rail sections, which are expected to perform better than the sections they replace. Frequently, however, the new sections evolve inherent deficiencies of their own. A case in point is afforded by the 112-lb. and 131-lb. sections which produced a rash of head-and-web separations.

But it now seems that the relatively new 115-lb. RE and 132-lb. RE rail sections will be around for some time. Under the sponsorship of the Rail committee, the research of the A.A.R. Engineering Division has been conducting a series of test measurements of the high localized stress areas of rails of these two sections laid in curved track. The conclusion was reached that the basis of design of these new sections is sound, and that the reduction in service of localized stresses was forecast with reasonable accuracy. Redesign of the 100-lb. RE rail and joint bar is reported to be under way. The new section is expected to incorporate the same principles of design that were used in the larger RE rail sections.

G. M. Magee, research engineer of the A.A.R. Engineering Division, supplemented the Rail committee report on this subject with an address in which he stated that the current report constitutes the final report of the new sections, as measurements were previously made and reported on tangent track. He added that the results of the measurements indicate that the improvements have reduced the fillet stresses sufficiently so that head-and-web separations should not develop under normal operating conditions.

A review of the supersonic method of inspection for defects in rail ends was given by C. J. Code, engineer of tests, maintenance of way, Pennsylvania. These defects include cracks within the joint areas around bolt holes and those in the upper fillets, which the supersonic detectors have been successful in locating. Mr. Code stated that a great number of rail ends have been tested with these devices, leading to the removal of the more seriously damaged rails, thus representing an important contribution to the safety of railroad track, in spite of the fact, he said, that service failures of this type seldom result in derailments.

The economic value of various sizes of rail was the subject of another interesting report of the Rail committee. This year's report compared the 112-lb. with the 131-lb. section, using as a basis for the study 20.48 track-miles of 112-lb. rail laid in 1942 and 1943 and 20.21 track miles of 131-lb. rail laid in 1944 on the Illinois Cntral. Three tabular statements accompanied the report. One, with the labor and material computed at 1944 prices, showed an annual credit of $6.50 in favor of the investment in the 131-lb. rail for an average annual traffic density of 28 million-gross tons. The second table showed a saving of 200.8 man-hours per mile per year by using 131-lb. rail instead of 112-lb., while the third table showed a 15.9-per cent saving in maintenance charges for an average of seven years by using 131-lb. instead of 112-lb. rail for the same tonnage conditions.

Conserving Materials

Not to be caught unprepared, the Track committee reported it had worked during the past year with Chairman H. R. Clarke of the Board of Direction Emergency Committee on Track Problems and had obtained in writing the consensus of the Track committee in regard to changes to be made to specifications and plans to conserve critical materials, should this become essential. It has also collaborated with Committee 3-A, General Reclamation, of the A.A.R. Purchases and Stores Division on general reclamation affecting track items.

Materials are not the only items that must be conserved—labor too must be employed to the best advantage. So the Committee on Economics of Railway Labor, for its current report on the analysis of operations of railways that have substantially reduced the cost of labor required in maintenance-of-way work, made an inspection trip over the St. Louis-San Francisco between Tulsa, Okla., and Kansas City, Mo. The purpose was to study a new track-maintenance set-up in which section gangs are replaced with larger district gangs.

G. W. Benson, superintendent of bridges, Central of Georgia; R. E. Dove, associate editor, *Railway Age*; H. E. Kirby, cost engineer, Chesapeake & Ohio; H. C. Forman, who is the assistant chief engineer of the Louisville & Nashville.

J. S. Reagan, assistant engineer of buildings, Reading; F. W. Biltz, assistant chief engineer, Reading; W. E. Gadd, Taylor-Colquitt Company.

A study of the economics of this arangement shows several advantages, reported this committee. A small force can be assigned to do the patrolling and miscellaneous chores while leaving the major portion of the track forces free to spend their full time on constructive track work. The larger gangs make it possible to plan and carry out track work too extensive for small crews to attempt. The larger forces also permit the greater utilization of power tools, with resulting savings in labor. The committee concluded that reorganizing track forces into district gangs is a practical method of utilizing labor and of reducing the cost of track work.

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SUPPLY TRADE

Budd's 1951 Net Was $10,882,613

Sales of the Budd Company last year amounted to $317,664,486, compared with $290,409,538 in 1950, according to the recently released annual report. Net profit was $10,882,613, compared with $18,425,800. "We delivered [last year] 119 main-line railway passenger and 37 self-powered RDC cars," Edward G. Budd, Jr., president, said in the report. A total of 75 of the company's rail diesel cars has been sold to 13 railroads, he added.

American Brake Shoe 1951 Sales, Net Highest Ever

Sales and net income of the American Brake Shoe Company in 1951 totaled, respectively, $147,569,868 and $6,468,609, both of which established records for the firm, according to the recently released annual report. The previous sales record for the company had been set in 1948, when sales were $120,190,784. Sales in 1950 amounted to $106,578,958, while net income in that year was $5,939,289. Unfilled orders at the end of 1951 were $61,000,000, off slightly from the all-time high of $63,000,000 in September 1951, the report said. At the beginning of 1951, unfilled orders were $42,000,000.

General Railway Signal Net Was $1,415,021 Last Year

Net income of the General Railway Signal Company and its subsidiaries in 1951 was $1,415,021, equal, after preferred dividends, to $3.92 a common share, compared with $1,500,258, equal to $4.18 a common share, in the preceding year, according to the firm's annual report. The company "entered the new year with a record backlog, which, with orders in prospect, should keep us fairly busy during the year, provided the growing material shortages do not reduce the pace of our operations," Paul Renshaw, president, said in the report.

The **National Brake Company** has acquired the assets of the Champion Brake division of the **Orme Company** of Chicago and Michigan City, Ind. National Brake will continue production and sale of the Champion-Peacock Micro-matic freight car hand brake in addition to its line of Peacock power hand brake equipment for all other types of rolling stock.

Ernest H. Colby has been appointed manager, plant operations, of **Shippers' Car Line Corporation,** subsidiary of the **American Car & Foundry Co.,** with headquarters at New York.

C. O. Wanvig, Jr., formerly secretary of the **Peerless Machine Company,** Racine, Wis., has been elected president, to succeed the late **J. R. McDonald.**

The **National Seating Company,** of Mansfield, Ohio, recently elected the following officers: President, **Robert G. Brooks;** vice-presidents, **J. E. Bingamon, C. A. Van Derveer, Jr.,** and **Bob Williams;** and secretary-treasurer, **W. A. Gustafson.** All were formerly connected with **S. Karpen & Bros.,** in the sales and management ends of the transportation seating division.

The **Fafnir Bearing Company,** of New Britain, Conn., and the **Waugh Equipment Company,** of New York, have jointly announced discontinuance of the manufacture and sale of Fafnir-Waugh railway journal bearings, because of the increasing demands of the defense program for ball bearings, Fafnir's major product, and a limit to available facilities for their production.

Earl L. Kidney has been elected assistant vice-president of the **Pacific and Atlantic Shippers Association, Inc.,** at Chicago.

OBITUARY

Oliver S. Lyford, 81, electrical engineer and consultant, who participated in the construction of Pennsylvania Station at New York, died on March 6, at Daytona Beach, Fla.

Phil Huber, chairman of the board of directors of the Ex-Cell-O Corporation, died recently.

R. B. Sayre (left), who has been appointed assistant vice-president of the Graybar Electric Company, effective March 31, and D. L. Harper (right), formerly branch manager at Omaha, Neb., who will succeed Mr. Sayre as district manager at Jacksonville, Fla. In his new post, Mr. Sayre will report to G. F. Hessler, vice-president in charge of sales at New York.

EQUIPMENT AND SUPPLIES

Knudson Asks Materials for Third-Quarter Equipment

Administrator James K. Knudson of the Defense Transport Administration announced on March 13 that he had filed with the Defense Production Administration a presentation seeking materials for production in this year's third quarter of 30,000 freight cars (other than tank cars), 2,550 tank cars, 100 passenger-train cars and 975 locomotives.

This claim is at the same level as that for this year's second quarter, but considerably in excess of the allotment made by D.P.A. for that quarter.

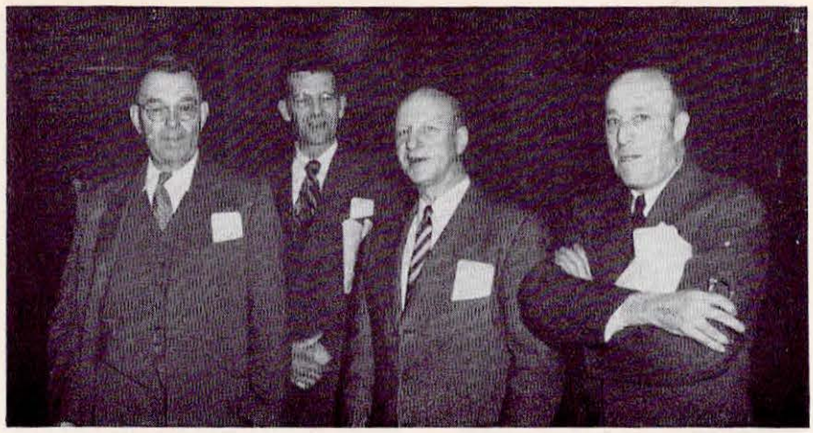
Also D.T.A. claimed third-quarter materials for 450,000 net tons of new rail for replacement together with the necessary materials required for railroad maintenance.

FREIGHT CARS

7,358 Freight Cars Delivered in February

February deliveries of new freight cars for domestic use totaled 7,358, the American Railway Car Institute and the Association of American Railroads have announced jointly. Lower steel allocations caused production to decline from the January level when deliveries totaled 8,642, the announcement said. Deliveries for February 1951 totaled 5,842.

The announcement added that orders for 6,120 new freight cars were placed during February. The backlog of cars on order on March 1 was 118,900. A breakdown by types of cars ordered and delivered in February, and of cars



G. W. Benson, superintendent of bridges, Central of Georgia; R. E. Dove, associate editor, *Railway Age*; H. E. Kirby, cost engineer, Chesapeake & Ohio; H. C. Forman, who is the assistant chief engineer of the Louisville & Nashville.

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E. L. Anderson, chief engineer, Frisco; W. A. Schubert, division engineer, Frisco; H. W. Cutshall, Electric Tamper & Equipment Co.

From the Missouri Pacific—R. E. Bell; J. M. Giles, assistant engineer.

of the council, spoke of the research work his group is doing and illustrated his talk with several sorry examples of poor paint protection for steel. He said his group believes that most of the structural steel fabricated today can be adequately protected without the removal of mill scale.

Speaking of railroad bridges in particular, Mr. Bigos said it appears that most railroads are using on their steel structures a prime coat of red lead that is mostly linseed oil, followed by a black finish coat of carbon or graphite. While linseed oil paints are outstanding in their performance over rust and mill scale, and for general maintenance painting, they are among the poorest for resistance to brine drippings. This is due, he said, to saponification of the linseed oil under the highly caustic conditions set up in, or under, the paint film by the electrolytic corrosion accelerated by the brine. His council hopes to have ready for publication in the late spring a manual which will include specifications for the cleaning, treating, and painting of steel structures.

The Waterproofing committee reported that it is making an exhaustive study of waterproofing paints for concrete protection.

In an address supplementing this committee report, J. B. Blackburn, research engineer, Joint Highway Research Project, Purdue University, discussed laboratory and outdoor tests with 104 different coatings applied to concrete. He classified these coatings into two types, permeable and impermeable. The permeable coating allows the passage of some liquid and the free passage of vapor, while the impermeable coating does not allow the passage of liquid but does permit the passage of vapor at a slow rate.

Mr. Blackburn went on to describe the tests to which

Significant Manual Changes

All A.R.E.A. committees have been reviewing the text in their respective chapters in the Manual during the current year, in order to bring the material as up to date as possible for the complete reprinting of the Manual in 1953. As a result, many recommendations of the committees concerned revisions to accomplish this purpose. Where the existing material was still basically sound, the recommendations were for reapproval without change, but where a large number of corrections were necessary, or where a rearrangement of the material with additions was required, the committees recommended the withdrawal of the existing Manual text and the adoption and substitution of new material. At the current meeting a number of the committees offered material for comments and criticism with the view of submitting it next year for publication in the new 1953 Manual.

Some of the more important proposals are summarized below, by committees:

Roadway and Ballast—Text appearing under the headings Physical Properties of Earth Materials and also Structural Foundation Soils was completely reworked and submitted in a more concise form, under the heading Physical Properties of Earth Materials, for comments and criticism with the expectation that it will be proposed as Manual material in 1953. A specification for Electric Shock Fences was also presented for comment and criticism with the view of presenting it next year for adoption. Further, material on Specifications for the Installation of Culverts and on Stabilization by Pressure Grouting which was submitted last year for comment and criticism was resubmitted for adoption. The committee also reworded the section on Roadway Drainage appearing in Chapter 1 of the Manual and recommended the adoption of the new material.

Track—Among several revisions recommended was one changing the text under Specifications for the Laying of New Track, Specifications for Laying Rail, and Specifications for Gage. Whereas the existing specifications stipulate that spikes shall be driven down until the heads are in contact with the base of rail the recommended changes specify that a 1/8-in. to 3/16-in. space be left between the underside of the head of the spike and the top of the base of the rail.

Buildings—It was recommended that the text appearing under the heading Asphalt Mastic Floors be deleted and replaced by new specifications under the heading Hot Asphalt Mastic Floors, and also that the text appearing under the heading Paints for Railway Buildings be replaced with new text which takes into account the railroads' practice of making exposure tests of manufacturers paints.

Wood Bridges and Trestles—Looking toward the new Manual in 1953, new material was presented for comment and criticism to replace the existing text under Specifications for Structural Timbers and under Notes on the Use of Stress-Grades. A new plan showing Recommended Practice for Design of Wood Culverts was likewise submitted for adoption and publication in the Manual.

Masonry—With the view of offering them for adoption next year, tentative revised Specifications for Shotcrete and revisions for including air-entrained concrete in the Specifications for Concrete and Reinforced Concrete Railroad Bridges were presented for comment and criticism.

From the Illinois Central—J. M. Trissal, assistant chief engineer; E. F. Snyder, assistant to chief engineer; A. L. Sams, engineer of design.

W. W. Kelly, general purchasing agent; and T. A. Blair, both Santa Fe.

the specimens were subjected. In summing up his investigation, he said, when all the results are studied together, it appears that, with certain qualifications, the impermeable type of coating is superior to the permeable type for preventing the surface deterioration of exposed concrete. One qualification is that all the surfaces which may absorb moisture can be coated. Another is that the concrete is impermeable so that inaccessible surfaces, such as the backs of abutments, can be left uncoated, or that the backs of these structures have previously been successfully waterproofed.

Durable Concrete Can Be Obtained

One of the more annoying problems of today's bridge and building supervisory officer is concrete deterioration. In an address supplementing the report of the Masonry committee, G. H. Paris, railroad representative of the Portland Cement Association, listed four rules for obtaining durable concrete. These are: (1) Use of sound aggregates; (2) proper proportioning in accordance with the well-known water-cement ratio; (3) correct mixing and placing; and (4) adequate curing. Air entrainment can also be an important factor for obtaining good concrete. Mr. Paris expressed the opinion that only by having competent inspectors on the job can good concrete be assured. And the railroads, he added, must figure the cost of inspection and supervision as an investment rather than an expense.

Since the stability of any structure is of primary interest to both bridge and building men, an address by Ralph B. Peck, research professor of soil mechanics, University of Illinois, on the subject of bearing capacities of clays, evoked much attention. Professor Peck an-

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Highways—A new Sign for Barrier conforming to the present recommended practice of the American Association of State Highway Officials was recommended for adoption to replace the existing drawing. A new drawing and text on Requisites for "No Right Turn" or "No Left Turn" Signals were also offered for adoption subject to final approval by the A.A.R., as was also a new drawing covering a highway crossing signal and gate with pedestal mounting. Revisions to 16 existing drawings of crossing protection signals were recommended to conform with changes recently adopted by the Signal Section, A.A.R.

Specifications for the Construction of Tracks in Paved Areas were offered by this committee for adoption as Manual material. In addition it resubmitted for adoption Specifications for the Construction of Plank Crossings, which cover both the full-depth and the shimmed-plank types of construction, and recommended principles for the Location of Highways Parallel with Railways, both of which had been presented last year for comment and criticism.

Records and Accounts—Looking to the reprinting of the Manual, this committee developed during 1951, a Table of Contents for a complete rearrangement of its material. In addition to the revision of six forms, together with instructions relative to their use, this committee recommended the deletion of he entire text now appearing under the heading Cost-Keeping Methods, Statistical Records, and Forms for Analyzing Expenditures for Assistance in Controlling Expenditures and the adoption of new material under the same heading, and submitted, for adoption and publication, a new rail chart for graphically recording the history of rail in track.

Water Service and Sanitation—Asserting that experimental work at the U. S. Bureau of Mines has conclusively confirmed the findings of several railroads that use of the sodium sulfate-hydroxide ratio under various boiler pressures for the prevention of intercrystalline corrosion, as recommended by the Society of Mechanical Engineers' Code, is worthless so far as railroads are concerned, this committee has developed its own means of control with the possibility that it may be submitted for adoption later.

Impact and Steel Structures—Specifications for Movable Railway Bridges, Specifications for Assembly of Structural Joints Using High-Tensile Steel Bolts in Steel Railway Bridges, plans of expansion joint design, and suggested revision to two articles relating to the design of rocker-type bearings, were presented for the purpose of soliciting comments and criticism prior to their submission a year hence for adoption as Manual material. Also, while not directly a part of this assignment, the subcommittee on the Revision of Manual presented as information a digest of three sections of the University of Illinois Bulletin No. 382 concerning the strengthening of existing bridges.

Economics of Railway Location and Operation—Looking toward making specific recommendations next year, the committee restudied the amount of curve resistance and effect of the degree of curvature on the cost of maintenance and operation, and submitted a report for comment and criticism.

Uniform General Contract Forms—A new Form of Agreement for Unloading Liquified Petroleum and Other Gases was recommended for adoption to replace existing Manual material, and a tentative draft of a Form of Lease for Drilling and Producing Oil and Gas on Railway Lands was submitted for comment and criticism.

On motions made before the convention last week all of the recommendations mentioned above were adopted.

C.B. Bronson, maintnance-of-way assistant to vice-president, New York Central; C. N. Riddle, Bethlehem Steel Corp.; R. L. Groover, chief engineer, Atlantic Coast Line.

C. J. Geyer, vice-president, construction and maintenance, C.&O.; A. B. Pierce, engineer of water supply, Southern.

nounced that the results of theoretical and experimental studies of the properties of clay soils lead to a very simple equation for computing the ultimate bearing capacity or maximum pressure to which the soil can be subjected without complete failure. He outlined the formula and described how it should be used.

The report of the Committee on Wood Bridges and Trestles included a brief description of tests made with timber pile dolphins and their general use. This report was supplemented by an address by A. D. Freas, engineer, Forest Products Laboratory, on glued laminated wood members. He described the fabrication, gluing and treating of such members, and mentioned varied applications to demonstrate their usefulness. He asserted that basic information for the design of these members is available, as well as competent fabricators to manufacture and, if necessary, to design structures made from them. Many glued laminated members are available from manufacturers of farm buildings, he said, from whom they can be bought "off the shelf."

What About Diesels if War Comes?

Perhaps the highlight of the report of the Committee on Water Service and Sanatation was the account of the continuance of the search for alternate types of corrosion inhibitors for diesel-engine cooling systems because of the possibility of a shortage in the supply of chromate in case of a national emergency. It was reported that one proprietary compound, consisting of 95 per cent borax and 5 per cent sodium nitrate, has been tested in the laboratory and in the field. Data accumulated to date indicate this compound has some merit and probably would be a fairly acceptable substitute for alkaline chromates as a diesel cooling water inhibitor.

In a study to eveluate the quality requirements of water for stationary automatic steam generators, this committee submitted five approved methods to produce water of the proper quality. In the order of preference, these methods are: (1) distilled water or the equivalent from demineralization; (2) zeolite-treated water, with organic and sodium phosphate after-treatment to prevent corrosion; (3) lime-soda-ash softened water with sodium phosphate and organic after-treatment to produce zero-hardness non-corrosive water; (4) potassium carbonate and organic in sufficient quantity to obviate corrosion and produce non-adherent scale, especially in the form of silica salts; and (5) sodium phosphate, organic, and soda-ash treatment in sufficient quantity to insure lack of scale and corrosion.

Suggestions on how diesel fuel-oil facilities should be built appear in the report of the Water Service committee, which, prepared in collaboration with the Buildings committee, presents specifications for the design, installation and efficient maintenance and operation of diesel fuel-oil facilities.

Last year the Water Service committee presented a report covering the design and operation of small septic tank disposal systems capable of handling wastes of 5 to 20 people, or up to 1,000 gal. of sewage flow per day. This year the committee submitted a report on the design and operation of septic tanks for handling large sewage flows up to 5,000 gal. per day.

A great deal new has been added in the railway work equipment field during the past year, judging from the report of the Maintenance-of-Way Work Equipment committee. In covering new developments in work equipment 47 new machines were described, excluding off-track ballast cleaners, track-cleaning machines, and switch heaters, which were covered by other assignments.

How About Machine Operators?

It is not wise or economical to shorten the service life of any machine by placing it in the hands of a poorly schooled and improperly trained operator. That is the opinion of the Work Equipment committee, and no one will dispute it, but it gives rise to the question, How are railroads going to protect their large investments in work equipment, and obtain the maximum return on them? The answer is given in a survey made by this committee. It was developed that few railroads have any definite program for training equipment operators. While recognizing that hindrances to setting up such programs are presented by provisions in labor agreements, seniority restrictions, management indifference, seasonal employment, and lack of adequate supervision, the committee was nevertheless of the opinion that a definite program or procedure of training is essential.

A procedure suggested included: (1) Establish positions of operator instructor; (2) use helpers or trainees; (3) determine the approximate number of operators required for next season; (4) encourage employees to apply for an operator's position for next year; (5) furnish interested employees with printed information on

From the Louisville & Nashville — J. W. Caywood, supervisor of bridges and buildings; M. W. Cox, assistant division engineer; Edward Wise, Jr., engineer maintenance of way.

the machine; (6) examine the employee on information furnished him; (7) instruct him in the peculiarities of the machine; (8) have him operate the machine on a test track; and (9) give all operators "refresher" instructions every five years.

How Long Should Machines Last?

Irrespective of the factors that cause depreciation, it is essential to have reasonably correct knowledge as to the life expectancy of various pieces of work equipment, not only for the purpose of establishing proper rates of depreciation, but as a basis for the justification of retirements or replacements. So, the Work Equipment committee, in collaboration with the Records and Accounts committee, developed information by questionnaire on the life expectancy of 127 units of work equipment, and presented a report showing this material together with the annual depreciation that should be used for each.

The Records and Accounts committee reported that it has been making cost studies in an attempt to develop normal production results of surfacing, ballasting, and tie installation through mathematical calculation of data made from field time studies, the results of which will be analyzed after more data are collected.

For those concerned with crossing elimination much helpful information is contained in the draft of a form of agreement presented by the committee on Uniform General Contract forms. Asserting that it would be impractical to submit a form of agreement complete in every detail for every state and which could be used as a model form, the committee submitted a form in the hope that it would prove useful as an up-to-date guide to insure that the interests of the railways are properly protected when an agreement of this nature is submitted to them for final approval.

Of special interest in the report of the Committee on Cooperative Relations with Universities was a portion which discussed some of the more important factors relating to the current possibilities of temporary and permanent employment of engineers in railway service. Pointing to its last year's report wherein it was announced that an advisory group seeking effective legislation was in unanimous agreement on three points vitally affecting the supply and use of engineering talent, the committee reported that, aside from providing for the deferment of college students on the basis of class standing or score in the college qualification test, and the delegation of manpower control to the director of defense mobilization, Congress had ignored all three provisions of the Selective Service Act and has particularly specified that draft boards are not to be required to use test scores in postponing the induction of college students. The committee was of the opinion that it is too early yet to predict what effect the policies will have in the next few years upon the supply of engineers and college male enrollments.

This committee also made an analysis of the impact of mobilization on manpower and asserted that a logical conclusion would be that Selective Service cannot hope to maintain its present policies with respect to occupational deferment of students, trainees, and young graduates. As matters now stand, it concluded, industry's main supply will be from those classified 4F and those returning from service.

More talking and writing about the technical manpower problems have been done in the last year than in the previous decade, or perhaps longer, said Dean O. W. Eshbach of Northwestern Technological Institute in an address following the committee report. He asserted there are three phases to this problem.

First is the level of current and prospective industrial development—a level reflecting a highly abnormal activity created by world conflict and postwar preparation for the continuation of that conflict—which, even if preparedness activities were suspended, would not diminish the demand for services and goods for some time. Second, he said, is the need for, and supply of, technical manpower. The current supply of technical talent is barely sufficient to care for the replacement and growth of the population. Third, he said, are the results and probable influence of the Selective Service college qualification tests and universal military training, if adopted. The application of the testing procedure, he said, will help the military forces more than industry in the near future, while U.M.T. has practically nothing to contribute to a solution of the manpower shortage or to the production of college men.

In an address in connection with the report of the Committee on Highways, W. J. Hedley, assistant chief engineer of the Wabash, presented an extensive analysis of the different types of grade crossing protection, and of their relative value in preventing accidents. What he did, in effect, was to elaborate on and bring up to date a similar analysis presented before the 1949 convention. He summarized the results this way: "The automatic gate has scored the best result. Modern flashing light signals at single track crossings run a close second. Manual gates do only moderately well and are not generally recognized as a modern type of protection. Watchman protection is definitely poor."

Pointers on what engineering officers can do to help promote economies in railway operation were given in an address by W. T. Rice, general superintendent of the Richmond, Fredericksburg & Potomac. Engineering officers, he said, can help reduce loss and damage claims by being careful not to set up conditions that will require freight trains to stop unnecessarily out on the line; they can help reduce personal injuries to passengers by taking precautions not to set up conditions that will cause lurches of passenger trains; then can do their part in reducing personal injuries to employees by providing a "safe place to work"; they can promote good will among shippers and passengers by not interfering more than is necessary with train movements; they can help speed traffic through terminals in various ways; and they can help avoid derailments by proper track maintenance.

Capacity N.R.A.A. Exhibit Pleases Engineers

H. M. McFarlane
President

Jess Mossgrove
President-elect

R. A. Carr
Secretary

Lewis Thomas
Assistant Secretary

Extra booths had to be added at the Chicago Coliseum to display the latest developments in equipment and materials to engineering men attending American Railway Engineering Association convention last week

The National Railway Appliances Association, true to its traditions, presented at Chicago on March 10-13 an exceedingly interesting display of new and improved machines, tools, devices and materials adapted for the maintenance and construction of railways.

This year's exhibit, the thirty-fifth to be staged by the N.R.A.A. in connection with A.R.E.A. conventions, was the largest in the last 20 years, or since signaling appliances ceased to be displayed for members of the Signal Section of the Association of American Railroads, which formerly met concurrently with the A.R.E.A. Continuing a custom inaugurated in 1949, the Track Supply Association and the Bridge and Building Supply Men's Association, allied respectively with the Roadmasters' Association and the American Railway Bridge and Building Association, also displayed their banners in the exhibit hall.

A total of 119 member companies displayed their products in a record number of booths—267—which were attended by more than 1,300 supply-company officers, engineers, sales representatives and service men. Thirty-five of these companies showed at least 65 new products which had never been exhibited before. Interest in these new tools and materials ran high, but was equaled, if not surpassed, by the attention given to the improvements made in existing machines since the last exhibit. The combination of new and improved products drew a continual trek of conventioneers between the Palmer House and the exhibit hall. Had it not been for a strike of operating employees on some railroads and the possibility of strikes on others, it is certain that a record number of visitors would have viewed the "show."

The officers of the association who arranged and supervised the exhibit this year were: H. M. McFarlane (Cullen-Friestedt Company, Chicago), president of the N.R.A.A.; Jess Mossgrove (Baldwin-Lima-Hamilton Corporation, Philadelphia), vice-president; R. A. Carr (Dearborn Chemical Company, Chicago), secretary; W. H. Tudor (International Harvester Company, Industrial Power Division, Chicago), treasurer; and Lewis Thomas (Q & C Co., Chicago), assistant secretary and director of exhibits. Honorary directors were C. L. Mellor (Barco Manufacturing Company, Chicago); and Max K. Ruppert (P & M Co., Chicago); and directors were J. B. Templeton (Templeton, Kenly & Co., Chicago); W. B. Blix (Nordberg Manufacturing Company, Milwaukee, Wis.); J. P. Kleinkort (Ramapo Ajax division, American Brake Shoe Company, Chicago); Kenneth Cavins (Fairmont Railway Motors, Inc., Fairmont, Minn.); and Eugene Harbeck (National Lock Washer Company, Chicago).

In the election of officers Mr. Mossgrove was advanced to president; Mr. Tudor was elected vice-president; Mr. Carr was elected treasurer; and Mr. Templeton became secretary. Directors elected for three years are Mr. Harbeck, K. I. Thompson (Oxweld Railway Service Company), and G. R. Betts (Armco Drainage & Metal Products Co.).

N.R.A.A. MARCH SHOW

Year	Exhibitors	Booths
1940	82	145
1941	79	143
1942	68	93
	(1943-1946: war years, no exhibits held)	
1947	101	195
1948	101	207
1949	119	243
1952	119	267

They keep coming back for more

One thing that distinguishes a boiler from most other types of equipment is that its *annual* operating cost is more than its initial cost. In fact, the annual cost of *fuel alone* for the average boiler installation usually *equals* or *exceeds* the purchase price — and the purchase price of a boiler represents a sizable capital investment.

With fuel costing what it does today, it is more important than ever before to select a boiler that will assure the most efficient performance possible. That is why it is especially significant that people who have bought our C-E Vertical Unit Boilers —and know these boilers *through their own experience* — continue to buy them.

Just glance at the examples at the right. It's just a small sample of the plants—in industry after industry—that have ordered and *reordered* **VU** Boilers.

Why not investigate the **VU** Boiler for *your* next installation. They are available in various capacities. Our recommendations as to the most suitable type of **VU** Unit for your particular requirements are available to you or your consultants without obligation.

A Chemical Company ordered two VU Boilers in 1939. In 1946 five more were ordered for three of their other plants. In 1949 two more were ordered for one of these same plants, and in 1950 two more units for a fifth plant. In 1951 three more units were ordered for still another plant — thirteen units for six plants in twelve years!

A Steel Company now has a total of eleven VU Boilers in four different plants. Starting with three units in 1936, it has reordered three times . . . most recently in the fall of last year with an order for three more units.

A Textile Manufacturer ordered two VU Units in 1936. Another unit was installed in 1940 and a third in 1944. Still another textile company installed one unit in 1945, a second in 1949 and has just ordered another.

An Electric Utility Company installed its first VU Unit in 1941. Two more units were ordered for another plant in 1947, a unit for a third plant in 1946 and still another for a fourth station in 1949.

A Refining Company ordered one VU Unit in 1937, another in 1940 and another in 1949 for one of its plants; also two in 1942 and one in 1947 for another plant. B-486

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT

ELESCO

THE SUPERHEATER COMPANY, INC.

Division of COMBUSTION ENGINEERING-SUPERHEATER, INC.

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BANKERS BUILDING CHICAGO

More 2nd-Quarter Material Allocated for Equipment

Increased allotments of controlled materials for second-quarter production of freight cars and locomotives have been announced by the Defense Production Administration.

The increases allocate to the National Production Authority's Railroad Equipment Division material for production of an additional 3,000 freight cars during the second quarter. Since previous allocations contemplated a second-quarter production of 18,000 cars, the quarter's program has now been put on a 7,000-cars-per month basis.

The D.P.A. announcement also said that car builders had been given permission to build up to 4,000 (instead of 3,000) additional cars, if this can be done "by stretching materials through conservation measures and use of inventory."

As for locomotives, the increased allotments are expected to raise the second quarter's production by 100 engines—from 700 to 800. And the industry will be permitted to build 50 more if it can stretch its allotments that far.

Increased second-quarter allotments have also been made for production of passenger automobiles and commercial trucks.

Strike Also Halts The Copper Range

A strike of maintenance-of-way employees has tied up operations of the Copper Range in northern Michigan's Keweenaw peninsula. An embargo against all freight to all points on the 100-mile road was issued by the A.A.R.'s Car Service Division. The strike halted all service as other employees stayed off their jobs in sympathy. The dispute is over wages.

ORGANIZATIONS

Members of the **Trans-Missouri-Kansas Shippers Board** will learn of "The Hidden Revolution in Railroading" and hear a panel discussion on terminal switching, if they obey the novel "summons" served upon them in connection with the board's 30th annual meeting in St. Joseph, Mo., on March 20. William H. Schmidt, Jr., western editor of *Railway Age*, will describe the "revolution", and O. W. Limestall, general superintendent of transportation, Chicago, Rock Island & Pacific, will moderate the panel on terminal switching. E. W. Coughlin, of the Car Service Division of the Association of American Railroads, will summarize the current transportation picture. A joint luncheon, at which Mr. Schmidt will speak, will be held in the Hax Art Center at 12:15 p.m., in cooperation with the **Traffic Club of St. Joseph** and the **St. Joseph Chamber of Commerce.** T.M.K. board committee meetings scheduled for March 19 will be held in the Robidoux Hotel.

The **Chicago Transportation Club** will hold a "Sales Presentation Forum" featuring a panel discussion by representatives of each form of transportation, of shippers, forwarders, and traffic research, in the LaSalle Hotel, on March 25, at 7 p.m. Members of the panel will be: (For railroads), L. E. Clarahan, vice-president, Wabash; (for airlines), M. B. Gragg, director of sales, United Air Lines; (for freight forwarders), R. H. Burgess, president, International Forwarding Company; (for motor transport), W. S. Myrin, general sales manager, Consolidated Freightways; (for shippers), J. R. Staley, vice-president, Quaker Oats Company; (for water transport) R. C. Colton, vice-president, Lykes Brothers Company; (for traffic research) Schuyler Hopper, president, Schuyler Hopper Company; (for traffic and transportation publication) Emil C. Stanley, executive vice-president, Traffic Service Corporation.

Officers to serve the club during the coming year were elected at the annual meeting on March 4. They are: President, R. E. Shylin, Central Motor Lines; vice-president, P. W. Kroeker, Curtiss Candy Company; secretary, A. E. Parker, Glidden Company; treasurer, R. E. Schmidt, Chicago, Burlington & Quincy; assistant secretary, L. Kizorek, Norwalk Truck Line; assistant treasurer, P. E. Nordgren, Chicago North Shore & Milwaukee.

The **Cincinnati Traffic Club** has elected G. O. Fagan, general traffic manager of the Drackett Company, as president. He succeeds J. T. Hall, general agent of the Chicago & North Western. Installed in office with Mr. Fagan at the club's annual dinner on February 12 were: W. H. Bachmann, general agent, Wabash, as first vice-president; J. E. Ellis, traffic manager, Burger Brewing Company, as second vice-president; H. G. Melvin, Sr., general freight agent, Merchant Shippers Association, as third vice-president; E. A. Whiting, traffic manager, S. A. Gerrard Company, as treasurer; and H. F. Oehlschlaeger, general agent, Chicago, Indianapolis & Louisville, as secretary.

The 26th annual and 66th regular meeting of the **Allegheny Regional Advisory Board** will be held on March 20 in the William Penn Hotel, Pittsburgh. D. L. McElroy, vice-president of the Pittsburgh-Consolidation Coal Company, will be the principal speaker.

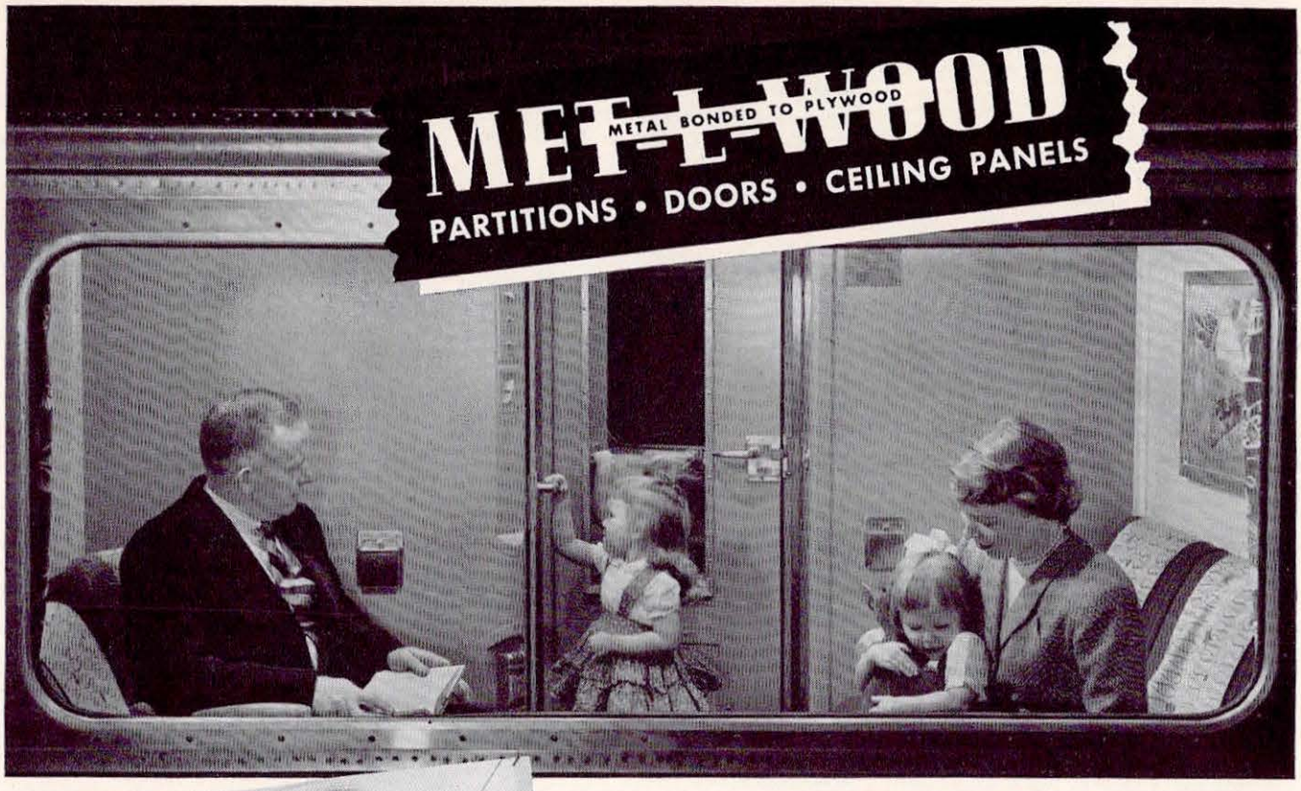
The **Columbus Transportation Club** will hold its annual election and "free" buffet dinner at the Columbus Maennerchor Club, 966 South High street, Columbus, on March 27.

The **New York Railroad Club** will hold its annual "electrical night" on March 20, at 8 p.m., in the auditorium of the Engineering Societies building, 33 West 39th street, New York. John A. Hutcheson, vice-president, Westinghouse Electric Corporation, and director of Westinghouse research, will discuss the importance of "Research in Industry," and W. A. Brecht, manager of the transportation engineering department of Westinghouse, is scheduled to present a brief report on "Locomotive Development."

Following the resignation of C. L. Patterson as president of the club, because of his transfer from the Lehigh Valley to the Duluth, Missabe & Iron Range (*Railway Age*, December 24, 1951, page 46), the following have been designated as club officers for the current year: President, J. A. Schwab, general manager, Eastern region, Pennsylvania; vice-presidents, F. B. Bank, general manager, New York Central, A. E. Kriesien, assistant vice-president and general manager, Erie and C. F. Bayer, manager, purchases and stores, Delaware, Lackawanna & Western; executive secretary, C. T. Stansfield, president, Ellcon Company; treasurer, P. M. Kelly, comptroller, Central of New Jersey; and assistant treasurer, J. J. Sandhaas, treasurer, Tuco Products Corporation.

The **Atlantic States Shippers Advisory Board** will hold its next regular meeting at the Hotel Roanoke, Roanoke, Va., on April 16-17. Francis E. Simmons, business analyst, associated with American Viscose Corporation, Washington, D. C., will be the guest speaker at a special luncheon on the 17th.

The 48th annual meeting of the **American Wood-Preservers' Association** will be held on April 21, 22 and 23 at the Hotel New Yorker, New York. A paper on "Use of Treated Lumber for Railway Car Repair and Construction," by F. R. Denney, Texas & Pacific, at Dallas, and another on "Diversified Uses of Treated Wood on Railroads," by L. T. Nuckols, Chesapeake district, Chesapeake & Ohio, at Richmond, are among those scheduled for presentation.



Above — Two views of Drawing Rooms in modern Budd-Built Passenger cars, showing Met-L-Wood doors, partitions and trim.

in Budd-Built Passenger Cars

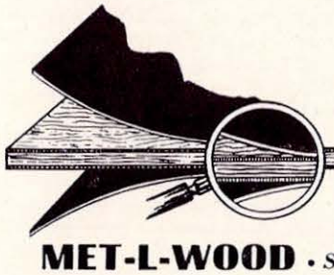
● Met-L-Wood used in the modern Budd-built passenger cars has these important advantages for builders, railroads and passengers:

Fabrication with Met-L-Wood is fast . . . Prefabricated doors, partitions and panels simplify assembly and save labor costs . . . and standard Met-L-Wood panels can be drilled, sawed, tapped or routed without special tools.

Lighter weight, as compared with equivalent all-steel construction, reduces overall car weights, lowers gravity centers—makes for lower operation and maintenance costs.

Inherent beauty of Met-L-Wood is backed by vibration damping, sound deadening and insulating qualities to add to passenger comfort in smart, modern surroundings.

Details on Met-L-Wood uses in passenger cars, baggage cars and cabooses will be furnished promptly on request.



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SUPPLY TRADE

Budd's 1951 Net Was $10,882,613

Sales of the Budd Company last year amounted to $317,664,486, compared with $290,409,538 in 1950, according to the recently released annual report. Net profit was $10,882,613, compared with $18,425,800. "We delivered [last year] 119 main-line railway passenger and 37 self-powered RDC cars," Edward G. Budd, Jr., president, said in the report. A total of 75 of the company's rail diesel cars has been sold to 13 railroads, he added.

American Brake Shoe 1951 Sales, Net Highest Ever

Sales and net income of the American Brake Shoe Company in 1951 totaled, respectively, $147,569,868 and $6,468,609, both of which established records for the firm, according to the recently released annual report. The previous sales record for the company had been set in 1948, when sales were $120,190,784. Sales in 1950 amounted to $106,578,958, while net income in that year was $5,939,289. Unfilled orders at the end of 1951 were $61,000,000, off slightly from the all-time high of $63,000,000 in September 1951, the report said. At the beginning of 1951, unfilled orders were $42,000,000.

General Railway Signal Net Was $1,415,021 Last Year

Net income of the General Railway Signal Company and its subsidiaries in 1951 was $1,415,021, equal, after preferred dividends, to $3.92 a common share, compared with $1,500,258, equal to $4.18 a common share, in the preceding year, according to the firm's annual report. The company "entered the new year with a record backlog, which, with orders in prospect, should keep us fairly busy during the year, provided the growing material shortages do not reduce the pace of our operations," Paul Renshaw, president, said in the report.

The **National Brake Company** has acquired the assets of the Champion Brake division of the **Orme Company** of Chicago and Michigan City, Ind. National Brake will continue production and sale of the Champion-Peacock Micro-matic freight car hand brake in addition to its line of Peacock power hand brake equipment for all other types of rolling stock.

Ernest H. Colby has been appointed manager, plant operations, of **Shippers' Car Line Corporation,** subsidiary of the **American Car & Foundry Co.,** with headquarters at New York.

C. O. Wanvig, Jr., formerly secretary of the **Peerless Machine Company,** Racine, Wis., has been elected president, to succeed the late **J. R. McDonald.**

The **National Seating Company,** of Mansfield, Ohio, recently elected the following officers: President, **Robert G. Brooks;** vice-presidents, **J. E. Bingamon, C. A. Van Derveer, Jr.,** and **Bob Williams;** and secretary-treasurer, **W. A. Gustafson.** All were formerly connected with **S. Karpen & Bros.,** in the sales and management ends of the transportation seating division.

The **Fafnir Bearing Company,** of New Britain, Conn., and the **Waugh Equipment Company,** of New York, have jointly announced discontinuance of the manufacture and sale of Fafnir-Waugh railway journal bearings, because of the increasing demands of the defense program for ball bearings, Fafnir's major product, and a limit to available facilities for their production.

Earl L. Kidney has been elected assistant vice-president of the **Pacific and Atlantic Shippers Association, Inc.,** at Chicago.

OBITUARY

Oliver S. Lyford, 81, electrical engineer and consultant, who participated in the construction of Pennsylvania Station at New York, died on March 6, at Daytona Beach, Fla.

Phil Huber, chairman of the board of directors of the Ex-Cell-O Corporation, died recently.

R. B. Sayre (left), who has been appointed assistant vice-president of the Graybar Electric Company, effective March 31, and D. L. Harper (right), formerly branch manager at Omaha, Neb., who will succeed Mr. Sayre as district manager at Jacksonville, Fla. In his new post, Mr. Sayre will report to G. F. Hessler, vice-president in charge of sales at New York.

EQUIPMENT AND SUPPLIES

Knudson Asks Materials for Third-Quarter Equipment

Administrator James K. Knudson of the Defense Transport Administration announced on March 13 that he had filed with the Defense Production Administration a presentation seeking materials for production in this year's third quarter of 30,000 freight cars (other than tank cars), 2,550 tank cars, 100 passenger-train cars and 975 locomotives.

This claim is at the same level as that for this year's second quarter, but considerably in excess of the allotment made by D.P.A. for that quarter.

Also D.T.A. claimed third-quarter materials for 450,000 net tons of new rail for replacement together with the necessary materials required for railroad maintenance.

FREIGHT CARS

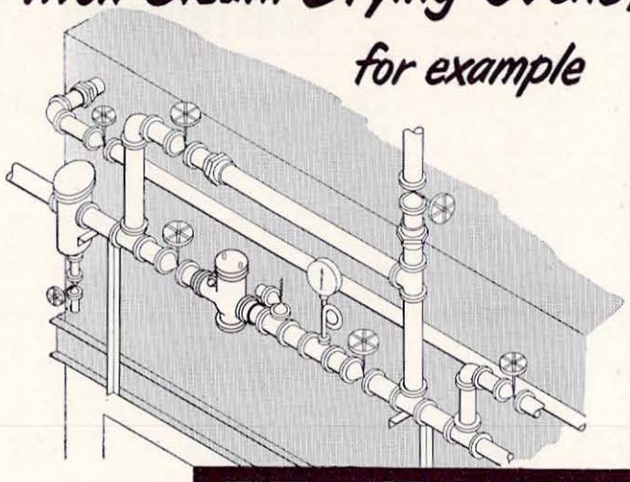
7,358 Freight Cars Delivered in February

February deliveries of new freight cars for domestic use totaled 7,358, the American Railway Car Institute and the Association of American Railroads have announced jointly. Lower steel allocations caused production to decline from the January level when deliveries totaled 8,642, the announcement said. Deliveries for February 1951 totaled 5,842.

The announcement added that orders for 6,120 new freight cars were placed during February. The backlog of cars on order on March 1 was 118,900. A breakdown by types of cars ordered and delivered in February, and of cars

Are Your Pressure Regulators Doing As Well?

...on Steam Drying Ovens, for example



THE INSTALLATION

In steam supply line to battery of 2 drying ovens at Ferro Chemical Corporation, Bedford, Ohio. Ovens individually controlled by thermostatic valves.

THE HISTORY

Specifications called for a valve to reduce initial steam pressure of 70 psi to 13 psi, and to maintain reduced pressure automatically without significant fluctuation whether one, or both, or neither oven is operated. Ovens to be operated at same or different temperatures, depending on process requirements.

Specifications were met with one No. 960 Crane Pressure Regulator, properly selected for capacity, and installed with adequate drainage of condensate.

In service now more than 5 years without interruption, Crane Pressure Regulator is giving complete satisfaction. Working like new; maintenance cost to date: zero. Remarkably simple to adjust.

VALVE SERVICE RATINGS

SUITABILITY:
Does everything claimed for it

MAINTENANCE COST:
None; working like new

CORROSION-RESISTANCE:
Steam only - corrosion no problem

SERVICE LIFE:
In 5 years; no sign of wear

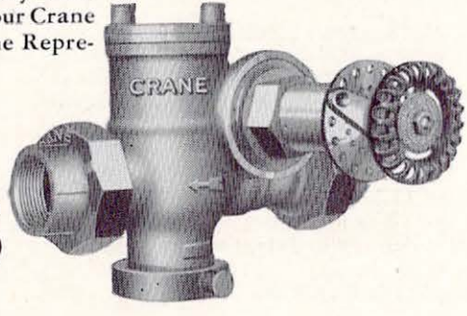
OPERATING RESULTS:
No fluctuation of oven heat

PRICE:
Good buy

AVAILABILITY:
Regular Crane item

THE VALVE

Crane No. 960 Brass Pressure Regulator reduces 250-Pound steam or air inlet pressure up to 80%. Available for operation at any of 4 pre-set ranges within 1 to 200 pounds outlet pressure. Adjusts easily within any set operating range. All wearing parts renewable; virtually never wears out. See your Crane Catalog or Crane Representative.



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on order on March 1, appears in the accompanying table.

Type	Ordered Feb. 1952	Delivered Feb. 1952	On Order & Undelivered Mar. 1, 1952
Box—Plain ...	1,800	1,972	36,917
Box—Auto	500	0	750
Flat	53	144	3,716
Gondola	700	1,204	23,247
Hopper	1,900	2,329	36,299
Covered Hopper	801	223	5,220
Refrigerator ..	0	441	4,275
Stock	0	0	500
Tank	260	626	7,068
Caboose	6	63	467
Other	100	356	440
TOTAL	6,120	7,358	118,900
Carbuilders ...	2,995	5,494	76,646
Railroad Shops	3,125	1,864	42,254

The **Ft. Dodge, Des Moines & Southern** has ordered 200 50-ton box cars from the Pullman-Standard Car Manufacturing Company.

The **Grand Trunk Western** has ordered six caboose cars from the International Railway Car & Equipment Manufacturing Co.

The **Great Northern** has ordered 100 70-ton covered hopper cars from the Pullman-Standard Car Manufacturing Company.

The **Minneapolis, St. Paul & Sault Ste. Marie** has ordered 300 50-ton box cars and 100 50-ton gondola cars from its own shops.

The **Nashville, Chattanooga & St. Louis** has ordered 400 50-ton hopper cars from the Pullman-Standard Car Manufacturing Company.

The **New York Central** has ordered 600 70-ton covered hopper cars and 500 50-ton box cars from the Pullman-Standard Car Manufacturing Company.

The **St. Louis-San Francisco** has ordered 500 50-ton hopper cars from the Pullman-Standard Car Manufacturing Company.

The **Union Pacific** has ordered 2,600 freight cars from its own shops. Included are 500 70-ton ore cars, 500 70-ton flat-bottom fixed-end gondola cars, 500 70-ton hopper cars, 500 50-ton box cars, 100 70-ton mill-type drop-end gondola cars and 500 50-ton automobile box cars. The inquiry for these cars was reported in *Railway Age* of January 28, page 53.

LOCOMOTIVES

A **Western Pacific** locomotive order—reported in *Railway Age* January 14, page 208, for three 6,000-hp. road freight locomotives—has been changed to six 1,200-hp. switchers from the same builder (Electro-Motive) and on March 10 the road placed an additional order for 9 1,500-hp. general purpose locomotives. The first order is now scheduled for delivery in July, the second in October. The approximate cost of the two orders is $2,500,000.

The **Jersey Central Lines** have ordered 38 diesel-electric locomotive units, including 19 1,600-hp. general utility locomotives from American Locomotive Company-General Electric Company; 13 1,600-hp. general utility locomotives from the Electro-Motive Division of General Motors Corporation; 4 1,200-hp. general utility locomotives from the Baldwin-Lima-Hamilton Corporation; and 2 1,200-hp. yard switching locomotives from the Electro-Motive Division of General Motors Corporation. The locomotives will cost an estimated $6,024,537.

PASSENGER CARS

The **Atchison, Topeka & Santa Fe** has ordered two diesel rail cars from the Budd Company. Both cars are of the RDC-1, all-coach type, and are intended for service between Los Angeles and San Diego.

The **Canadian National** has requested bids from United States and Canadian manufacturers for construction of 194 passenger-train cars. Included in the equipment are: Forty-seven first-class coaches; 52 four-section four-bedroom eight-duplex-roomette sleeping cars; 8 four-compartment buffet-lounge cars; 6 five-compartment three-drawing room sleeping cars; 6 five-double-bedroom 12-roomette sleeping cars; 10 eight-section one-bedroom sixteen-chair dining-room-sleeping cars; 5 parlor-buffet cars; 20 tourist cars; 20 dining cars; 15 cafe parlor cars; and 5 parlor cars.

The **New York Central** has ordered seven rail diesel cars from the Budd Company. Six of the cars are of the RDC-1, all-coach type, and one is of the RDC-3, R.P.O.-baggage-coach type.

The **New York, New Haven & Hartford** has ordered five diesel rail cars from the Budd Company. All are of the RDC-1, all-coach type.

SIGNALING

The **Norfolk & Western** has ordered from the Union Switch & Signal Division of the Westinghouse Air Brake Company relays, rectifiers, transformers, housings, etc. for flashing light highway crossing signals at Henry, Va. Installation will be by the railway's construction forces.

The **Union Pacific** will extend its automatic cab-signal system to the unequipped 314 miles of its 990-mile line between Ogden, Utah, and Omaha, Neb. Interstate Commerce Commissioner William J. Patterson said last week that he had been advised to this effect by President A. E. Stoddard of the U.P. The commissioner's statement was made in the course of testimony before the Senate Interstate Commerce Committee in support of proposed legislation to give the commission authority to require installation of radio and other train-communication facilities. In a recent report on a U.P. accident, the commission recommended that the road extend its cab-signal system to the entire Ogden-Omaha line (*Railway* Age. March 10, page 108). The unequipped 314 miles include the 176-mile section between Ogden and Green River, Wyo., the 56-mile section between Laramie, Wyo., and Cheyenne, and the 82-mile section between Columbus, Neb., and Omaha. Work on the latter section was already well under way when the commission's recommendation was made.

CONSTRUCTION

Canadian National to Build New Yard at Montreal

To provide additional freight terminal facilities "for efficient and economic handling of a progressively increasing volume of traffic" to and from Montreal, the Canadian National has begun a $10-billion yard and terminal project which, it is reported, will "match the vastly improved Canadian Pacific freight yard facilities on the island of Montreal."

According to a brief statement tabled in the House of Commons at Ottawa by Canadian Transport Minister Lionel Chevrier, the new facilities will be constructed on an area of about 1,000 acres adjoining the C. N.'s L'Assomption Subdivision. The site is described as "the only area readily accessible to the company's existing trackage and suitable for the yard and additional trackage."

About $5,000 has already been spent on surveys and plans, with an additional $1 million slated for expenditure during 1952 on further surveys and on land acquisition.

Atchison, Topeka & Santa Fe.—A line change, made necessary by construction of Lavon dam and reservoir on the east fork of the Trinity river, has been covered by a contract awarded to J. W. Moorman & Son, Snyder, Tex. The new line, which extends between Wylie, Tex., and Copeville, will be approximately 7.4 miles in length. The line to be abandoned is about 6.5 miles long.

Erie.—Ground was broken for a new diesel repair shop in this road's Brier Hill yards at Youngstown, Ohio, on March 6. The shop is designed to serve as maintenance headquarters for all diesel locomotives in service in the Mahoning Division area. Actual construction is expected to start next month. The main building is planned to be approximately 170 feet by 128 feet, providing 28,660 sq. ft. of shop floor space. It will consist of a high and a low bay. The low bay area will house the diesel service shop. It will be equipped with two tracks running the length of the building to permit simul-

taneous servicing of several locomotives. The repair shop will be in the high bay area to permit installation of an overhead traveling crane with lifting capacity of 30 tons. Heavy repairs and overhauling will be done in the repair shop, which also will have two tracks, each equipped with drop tables for removing undercarriages from locomotives. The drop tables will have capacities of 90 tons.

Nashville, Chattanooga & St. Louis.—This road has applied to the I.C.C. for authority to construct three main-line tracks, totaling about 6.04 miles, to connect with the enlarged Radnor yard of the Louisville & Nashville at Nashville, Tenn. The two roads have operated joint freight and passenger facilities at Nashville since 1900, although Radnor yard has been used exclusively by the L.&N. since its construction in 1919. The N.C.&St.L. has used the Kayne Avenue yard which, the road says, is too small for present-day traffic. The new construction, and use of Radnor yard by the N.C.&St.L., would eliminate congestion at Kayne avenue, and would greatly speed interchange between the two roads, according to the application.

Seaboard Air Line.—This road has asked the I.C.C. for authority to construct a 1.9-mile extension to existing trackage at Eastbrook, N. C., to serve government facilities at Sunny Point, N. C. The S.A.L. also asked authority to operate over a short segment of government owned trackage.

Texas & Pacific.—A $300,000 extension to diesel locomotive shop facilities at Lancaster yard, Fort Worth, Tex., will be started about April 1 by the Austin Company of Cleveland, Ohio, and Austin, Tex. It is expected that the work will be completed within four months.

FINANCIAL

Canadian Pacific.—*New Director.*—Howard C. Sheperd, president and director of the National City Bank of New York, has been elected to this road's board of directors.

Delaware & Hudson.—*New Director.*—George D. Hughey, vice-president and general manager of this road, has been elected to the board of directors to succeed the late John Wyckoff Mettler.

Florida East Coast.—*Reorganization.*—The I.C.C.'s reorganization plan for this road, which would have merged it with the Atlantic Coast Line, has been disapproved by Judge Strum of the U. S. Court of Appeals in Jacksonville, Fla. Judge Strum directed that, effective June 1, the bankruptcy trusteeship, under which the F.E.C. has been

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KINNEAR Rolling Doors are HERE TO STAY!

Like the rolling action of the wheel, the smooth upward operation of Kinnear Rolling Doors involves basic, unchanging principles of engineering efficiency. The door's advantages have been proved in thousands of installations, through more than half a century.

Today the dollar-saving importance of these Kinnear advantages is getting closer attention from building designers everywhere. As building *construction, operation* and *maintenance* costs continue to rise, the space, time, labor *and construction costs* that can be saved with efficient doors are major items in any business operation.

Kinnear's rugged curtain of interlocking metal slats opens straight upward. It coils compactly out of the way above the opening. Floor, wall and even ceiling space remain fully usable at all times. The door clears the opening from jamb to jamb, and from floor to lintel, completely out of traffic's way. When open, it is safe from damage by wind or vehicles. When closed, it presents an all-metal barrier that assures extra protection against storms, intruders, and fire.

In addition, Kinnear Rolling Doors provide smooth, easy operation under all conditions. They may be controlled manually, mechanically (by chain or crank) or electrically. Motor operated doors can be equipped with any number of remote control switches, for highest convenience. Kinnear Rolling Doors are built of various metals, in any size, for easy installation in old or new buildings. Let us send you complete information.

The KINNEAR Manufacturing Co.
Factories:
2020-40 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

SAVING WAYS for DOORWAYS **KINNEAR ROLLING DOORS**

operated since January 1941, revert to receivership proceedings and directed that the road be sold through foreclosure. John W. Martin, who has been serving as co-trustee with Scott M. Loftin, was named receiver.

Missouri - Kansas - Texas. — *Adjustment Bonds.*—Directors of this road have authorized payment of one coupon of the adjustment mortgage bonds. The coupon will become due and payable April 1 and is No. 56, dated October 1, 1950.

Pittsburgh & West Virginia. — *Trackage Rights.*—This road has applied to the I.C.C. for approval of a trackage rights agreement with the Pittsburgh & Lake Erie, covering use of a 1,022-foot segment in Connellsville, Pa. The P.&W.V. has used the segement, over which it connects with the Western Maryland, since 1930. The new agreement would increase rental payments to the P.&L.E. from $20,000 a year to $30,000.

Rutland.—*New Director.*—Frank A. Augusbury, Jr., president of the Hall Corporation of Montreal and vice-president of the George Hall Fuel Corporation of Ogdensburg, N. Y., has been elected to this road's board of directors to succeed William E. Navin, late president of the Rutland.

Seaboard Air Line.—*To Reduce Directorate.*—Stockholders of this road will be asked to vote at the March 25 annual meeting upon a proposal to reduce the number of directors from 23 to 18.

New Securities

Applications have been filed with the I.C.C. by:

DONORA SOUTHERN.—To issue notes in the amount of $441,500, payable on demand, to its parent company—United States Steel Corporation. The notes would bear interest at 4 per cent, if earned; if not, interest would be payable only up to the amount of the applicant's net income.

READING.—To assume liability for $8,340,000 of series T equipment trust certificates to finance in part the acquisition of 64 diesel-electric locomotives (listed below), which are expected to cost a total of $10,503,471.

	Description and Builder	Estimated Unit Cost
13	1,600-hp. road switching locomotives (American Locomotive and General Electric Companies)	$170,484
12	1,600-hp. roadswitching locomotives (Alco-G.E.)	161,756
3	1,600-hp. road switching locomotives (Alco-G.E.)	164,071
4	1,600-hp. road switching locomotives (Alco-G.E.)	163,073
10	1,600-hp. road switching locomotives (Baldwin-Lima-Hamilton Corporation)	162,944
4	1,600-hp. road switching locomotives (B-L-H)	162,965
6	1,500-hp. road switching locomotives (Electro-Motive Division, General Motors Corporation)	160,391
5	1,500-hp. road switching locomotives (Electro-Motive)	162,093
3	1,500-hp. road switching locomotives (Electro-Motive)	161,211
2	1,500-hp. road switching locomotives (Electro-Motive)	162,144
2	1,500-hp. "A" unit passenger locomotives (Electro-Motive)	169,785

The certificates, dated April 15, would mature in 30 semiannual installments of $278,000 each, beginning October 15. They would be sold by competitive bids, with interest rate to be set by such bids.

Division 4 of the I.C.C. has **authorized:**

MISSOURI PACIFIC.—To assume liability for $3,675,000 of series RR equipment trust certificates to finance in part acquisition of 31 diesel-electric locomotve units at an estimated total cost of $4,612,106 (*Railway Age*, February 25, page 72). Division 4 approved sale of the certificates for 99.689 with interest at 3⅛ per cent—the bid of Halsey, Stuart & Co. and five associates—which will make the average annual cost of the proceeds to the road approximately 3.2 per cent. The certificates, dated March 1, will mature in 15 annual installments of $245,000 each, beginning March 1, 1953. They were reoffered to the public at prices yielding from 2.2 to 3.2 per cent, according to maturity.

Security Price Averages

	March 11	Prev. Week	Last Year
Average price of 20 representative railway stocks	58.39	57.02	55.20
Average price of 20 representative railway bonds	92.27	92.68	97.69

Dividends Declared

ALLEGHENY & WESTERN.—guaranteed, $3, semiannual, payable July 1 and January 2, 1953, to holders of record June 20 and December 20.

CLEARFIELD & MAHONING.—$1.50, semiannual, payable July 1 and January 2, 1953, to holders of record June 20 and December 20.

DAYTON & MICHIGAN.—common, 87½c, semiannual; 8% preferred, $1, quarterly, both payable April 1 to holders of record March 14.

MINNEAPOLIS & ST. LOUIS.—25c, quarterly, payable March 14 to holders of record March 10.

SEABOARD AIR LINE.—common, $1.25, quarterly, payable March 27 to holders of record March 14; 5% preferred A, $1.25, payable March 27, June 26, September 26 and December 26 to holders of record March 14, June 13, September 15 and December 12.

SOUTHERN. — Mobile & Ohio stock trust, $2, semiannual, payable April 1 to holders of record March 15.

SPOKANE INTERNATIONAL.—$4, payable April 1 to holders of record March 20.

UNITED NEW JERSEY R.R. & CANAL.—$2.50, quarterly, payable April 1 to holders of record March 20.

RAILWAY OFFICERS

EXECUTIVE

As reported in *Railway Age* March 10, **Edward H. Bunnell** has retired as vice-president in charge of the Finance,

Edward H. Bunnell

Accounting, Taxation and Valuation Department of the ASSOCIATION OF AMERICAN RAILROADS at Washington, D. C. Mr. Bunnell entered railroad service in 1900 as a car clerk on the Atchison, Topeka & Santa Fe and subsequently served as timekeeper; account and distribution and statement clerk; chief clerk of the motive power department; chief clerk of the auditing department, and auditor of disbursements. In 1919 Mr. Bunnell was named general auditor and comptroller of the St. Louis-San Francisco, subsequently becoming chief accounting officer to the trustees. He was elected a vice-president of the A.A.R. in 1934.

G. Douglas Bogart has been appointed special assistant to vice-president of the CHESAPEAKE & OHIO at New York to deal mainly with stockholder relations. Mr. Bogart, who is 40 years old, is a graduate of Georgetown University. He was with W. R. Grace & Co. at New York for two years before serving as a naval officer in World War II. For the past five years Mr. Bogart has been an assistant to the president of the Federation for Railway Progress, and will continue in an advisory capacity on corporate and institutional memberships for the federation.

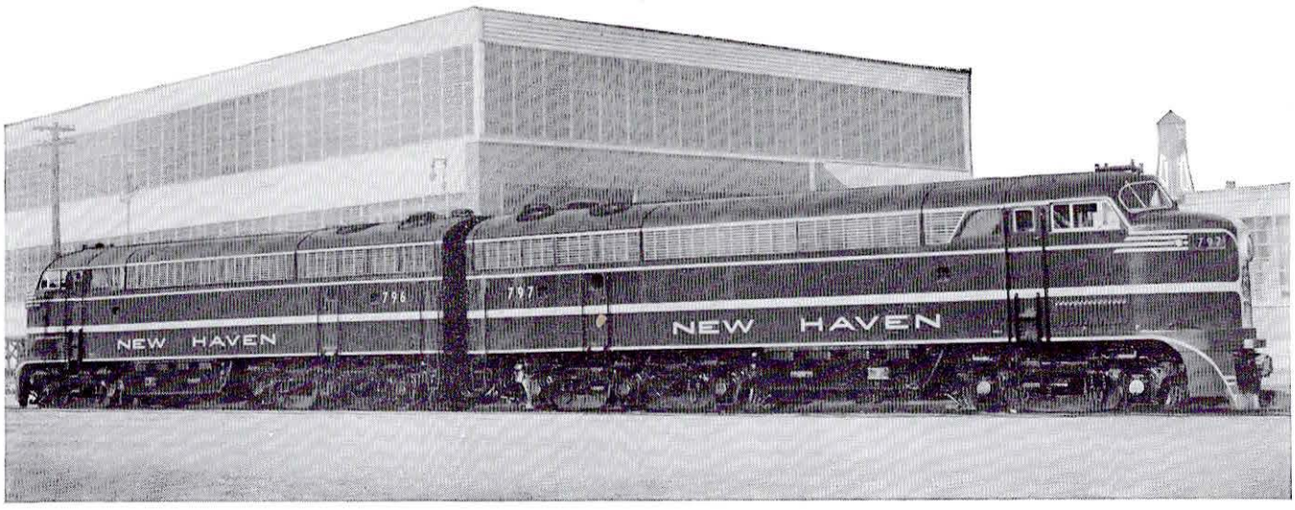
F. Clifton Toal, recently appointed assistant vice-president in charge of industrial and agricultural development of the SOUTHERN system at Washington, D. C. (*Railway Age* March 3), was born at Kosciusko, Miss., on March 12, 1906, and attended George Washington University (B.A.) and Harvard Business School. Joining the Southern at Columbia, S. C., in 1922, he held various clerical and secretarial positions until September 1930, when he was furloughed to the Chesapeake Steamship Company as traffic representative at Winston-Salem, N. C. Returning to the

F. Clifton Toal

Southern in January 1936, he was appointed merchandising agent at Atlanta, later advancing to freight traffic representative, commercial agent, general agent and assistant general freight agent. In 1941 Mr. Toal joined the United States Navy and advanced to captain in charge of the traffic department at Washington, where he di-

(Continued on page 119)

Two 2400 H.P. "C" Line Passenger Locomotives produced for the New York, New Haven & Hartford Railroad Co. by the Railroad Division of Fairbanks, Morse & Co., Chicago 5, Ill.



FAIRBANKS, MORSE USES NICKEL ALLOYED IRON AND STEEL FOR *Dependable, Low-Cost Operation*

Performance records of Fairbanks, Morse "C" Line Diesel Electric Locomotives show that substantial economies are gained with the help of alloy irons and steels.

To provide the extra stamina and wear resistance needed for low-cost operation under all sorts of conditions, Fairbanks, Morse uses nickel cast iron for crankshafts, liners, pump components and other important parts.

High vibration damping capacity and fatigue resistance of crankshafts cast in nickel alloyed iron contribute, particularly, to the long life and low maintenance of these engines.

Where stresses are high, as in connecting rods, connecting rod bolts, wrist pins, and the shaft connecting upper and lower crankshafts, nickel alloyed steels are used to assure top performance at low cost. Main structural members of the car body, as well as the engine frame, are of low alloy high strength steel... and numerous miscellaneous parts are made from nickel irons and steels.

At the present time, the bulk of the nickel produced is being diverted to defense. Through application to the appropriate authorities, nickel is obtainable for the production of engineering alloy steels and irons for many end uses in defense and defense supporting industries. Counsel and data on alloys containing nickel, for your present production or future projects, are yours for the asking. We invite your inquiries.

EMBLEM OF INCO SERVICE

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

Mayfair Room, The Blackstone Hotel, Chicago, Illinois

There's no place like home . . . for buying dependable napery. You get top quality and prompt delivery. The country's leading hotels insist upon this kind of service and prefer American-made Simtex napery . . . the napery that's ever fresh, crisp and gleaming due to it's exclusive patented Basco finish.

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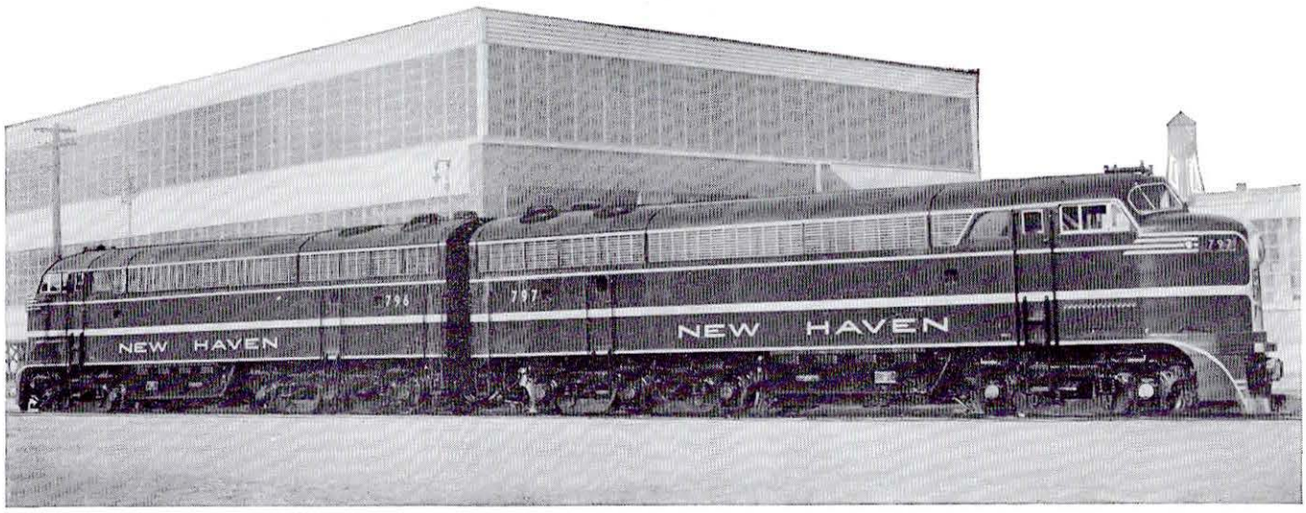
DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

Simtex

SIMTEX COVERS MORE TABLES THAN ANY OTHER MAKER IN AMERICA

Two 2400 H.P. "C" Line Passenger Locomotives produced for the New York, New Haven & Hartford Railroad Co. by the Railroad Division of Fairbanks, Morse & Co., Chicago 5, Ill.



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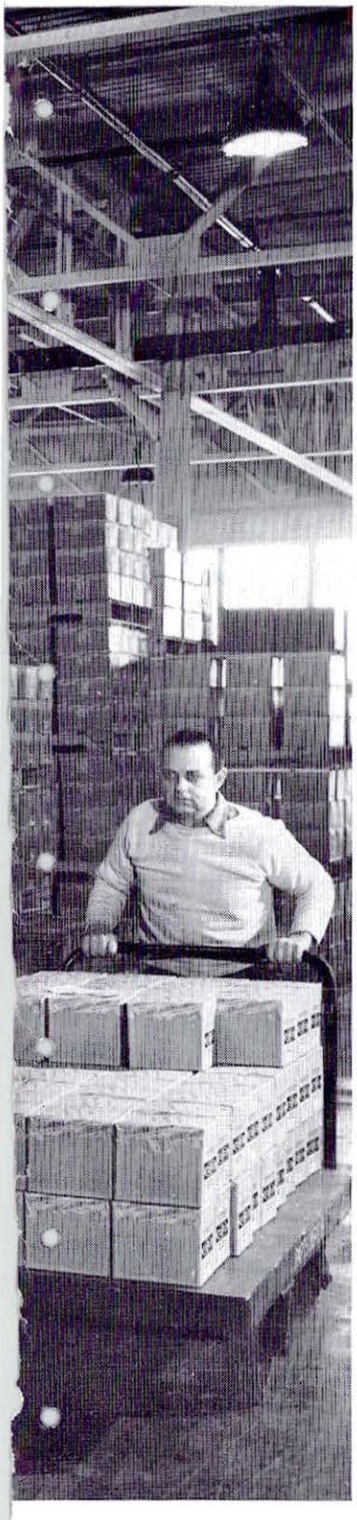
EMBLEM OF INCO SERVICE

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

20,000 "idle" parts that

You're Always better off with

keep trains on the go



YOU'RE looking at the inside of an Electro-Motive Parts Warehouse. Row upon row of Diesel locomotive parts—apparently idle.

But notice: every one is packed, ready for action. In specially engineered, lightweight cartons—rust protected by modern methods—they're ready to go on the next train.

There are 20,000 items in all—everything from an 8-ton engine to a half-ounce hairspring—20,000 of the most frequently used spares for every type of General Motors locomotive that's running anywhere in the United States.

This reserve of replacement parts is stocked at each of seven strategically located Branch Factories and Warehouses—in addition to an even larger supply in the Electro-Motive Parts Center at La Grange—to provide quick service in keeping General Motors Diesels "on the line."

This nationwide supply system permits railroads to operate with lower stocks of replacements parts—saving dollars in inventory and in storage space and helping to conserve the nation's stock of critical materials. It enables GM users to purchase parts in relation to usage—in *retail* quantities at *wholesale* cost.

It's another vital service in Electro-Motive's Lifelong Service Program that helps keep General Motors locomotives on the go for life.

* * *

10 PLUS FEATURES IN ELECTRO-MOTIVE'S LIFELONG SERVICE PROGRAM

1. **UNMATCHED EXPERIENCE** gained in designing, engineering and building more than 11,000 Diesel locomotive units.

2. **SUPERIOR MANUFACTURING FACILITIES** for mass-production of highest-quality locomotives at lowest cost.

3. **PROMPT PARTS SUPPLY** through strategically located factory branches and parts depots at eight key railroad centers.

4. **SKILLED TROUBLE-SHOOTING** and maintenance advisory service by a nationwide staff of 150 service engineers and parts specialists.

5. **FACTORY REBUILDING** of major assemblies with same techniques and tooling used in new manufacture.

6. **UNIT EXCHANGE SERVICE**—Prompt delivery of fully rebuilt assemblies in exchange for units needing rebuilding.

7. **PROPER SCHOOLING** of operating and maintenance personnel from the first day General Motors equipment goes on the line.

8. **SPECIAL ENGINEERING** of new and improved parts to make them fit General Motors units of any age.

9. **ONE-YEAR 100,000-MILE GUARANTEE** on Electro-Motive parts and rebuild effective upon installation, *not* the date of shipment.

10. **FACILITIES PLANNING SERVICE**—Expert assistance in helping railroads plan Diesel servicing and parts warehousing facilities.

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS

La Grange, Illinois • Home of the Diesel Locomotive

In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

Mayfair Room, The Blackstone Hotel, Chicago, Illinois

There's no place like home . . . for buying dependable napery. You get top quality and prompt delivery. The country's leading hotels insist upon this kind of service and prefer American-made Simtex napery . . . the napery that's ever fresh, crisp and gleaming due to it's exclusive patented Basco finish.

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DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

Simtex

SIMTEX COVERS MORE TABLES THAN ANY OTHER MAKER IN AMERICA

(*Continued from page* 114)

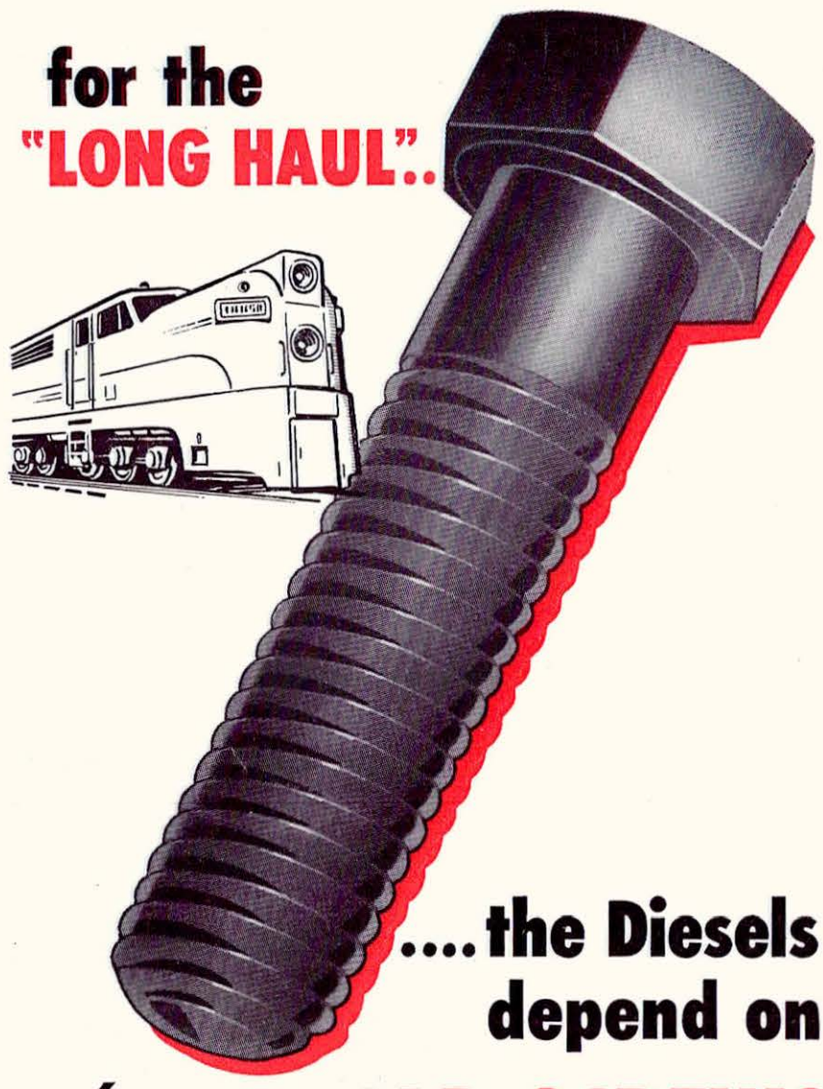
rected movement of Navy freight. He returned to the Southern as general industrial agent at Charlotte in January 1946, the position he held until his recent appointment.

As reported in *Railway Age* February 11, **Dr. Paul M. Zeis** has been appointed executive assistant vice-president — accounting and finance of the AKRON, CANTON & YOUNGSTOWN at Akron, Ohio. Dr. Zeis is a graduate of the University of Akron and received his M.A. and Ph.D. degrees from Princeton University. From 1938 to 1942 he was an assistant professor of political science at Akron University. He served as budget examiner from 1942 to 1944, transportation economist for the Civil Aeronautics Board in 1945, and transportation economist for the Department of Commerce in 1946 and 1947. He was then named chief of the Transportation and Communications division of the Department of Commerce, from which position he has been on

Dr. Paul M. Zeis

loan for the past few months to the National Production Authority, where he has been serving as acting director of the Production Evaluation Division. Dr. Zeis is the author of several publications on transportation, including "American Shipping Policy," "Governmental Assistance to European Air Transport," "Ocean Shipping," and "An Evaluation of the St. Lawrence Seaway and Power Project." Dr. Zeis and his staff prepared the analysis of federal transportation policy submitted to President Truman by Secretary Sawyer, generally known as the "Sawyer Transportation Report" (*Railway Age*, December 17, 1949, page 51). Dr. Zeis' position with N.P.A. has been to develop basic statistical data covering use of critical materials and progress of various segments of the defense program.

J. M. Prickett, vice-president in charge of labor and public relations of the KANSAS CITY SOUTHERN, has retired after 47 years of railroad serv-



for the "LONG HAUL".. ....the Diesels depend on

Lamson CAP SCREWS

Rugged, dependable, long-lasting Lamson Cap Screws have contributed a great deal to the tremendous "switch-over" to Diesel locomotion in the past few years.

Every Diesel requires hundreds of Cap Screws, each of which bears a share of the tremendous stresses and strains involved in holding the parts of the locomotive together. Under such circumstances Cap Screws show their true rugged qualities.

If you want Cap Screws that have passed this ultimate of tests, specify Lamson and be *sure.*

Lamson & Sessions

Railroad Sales Department
The LAMSON & SESSIONS *Co.*
1917 West 85th St., Cleveland 2, Ohio
Plants at
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Check the products below that interest you; tear off bottom of ad and send to us for complete information.

Large Bolts • Cotters • Square and Hex. Nuts • Weather-tite Bolts • Bent Bolts • Phillips and Clutch Head Screws • Lock Nuts • Cap Screws

YOU HAVE THE BEST INSURANCE AGAINST COSTLY DERAILMENT with

FREQUENT TESTING by Sperry RAIL SERVICE

Today's higher train speeds and increased loading, demand more frequent testing of your rail for maximum protection against heavy derailment costs.

85% of all service failures in track are caused by "LARGE" and "MEDIUM" fractures.

In track tested only once annually
35% of all detected defects are of large and medium size.

but – in track tested three or more times annually, only
10% of all defects are of the dangerous large and medium size.

Proving conclusively that frequent testing gives you the best insurance against costly derailment.

Sperry
FIRST IN RAIL TESTING

SPERRY RAIL SERVICE
DIVISION OF SPERRY PRODUCTS, INC.
Danbury, Connecticut
NEW YORK, N. Y. CHICAGO, ILL. ST. LOUIS, MO.

ice (*Railway Age*, February 11, page 82). While attending business school at Indianapolis in 1905, Mr. Prickett became secretary to the superintendent of the Cincinnati, Hamilton & Dayton, now part of the Baltimore & Ohio. In 1906, he joined the K.C.S. as secretary to the general

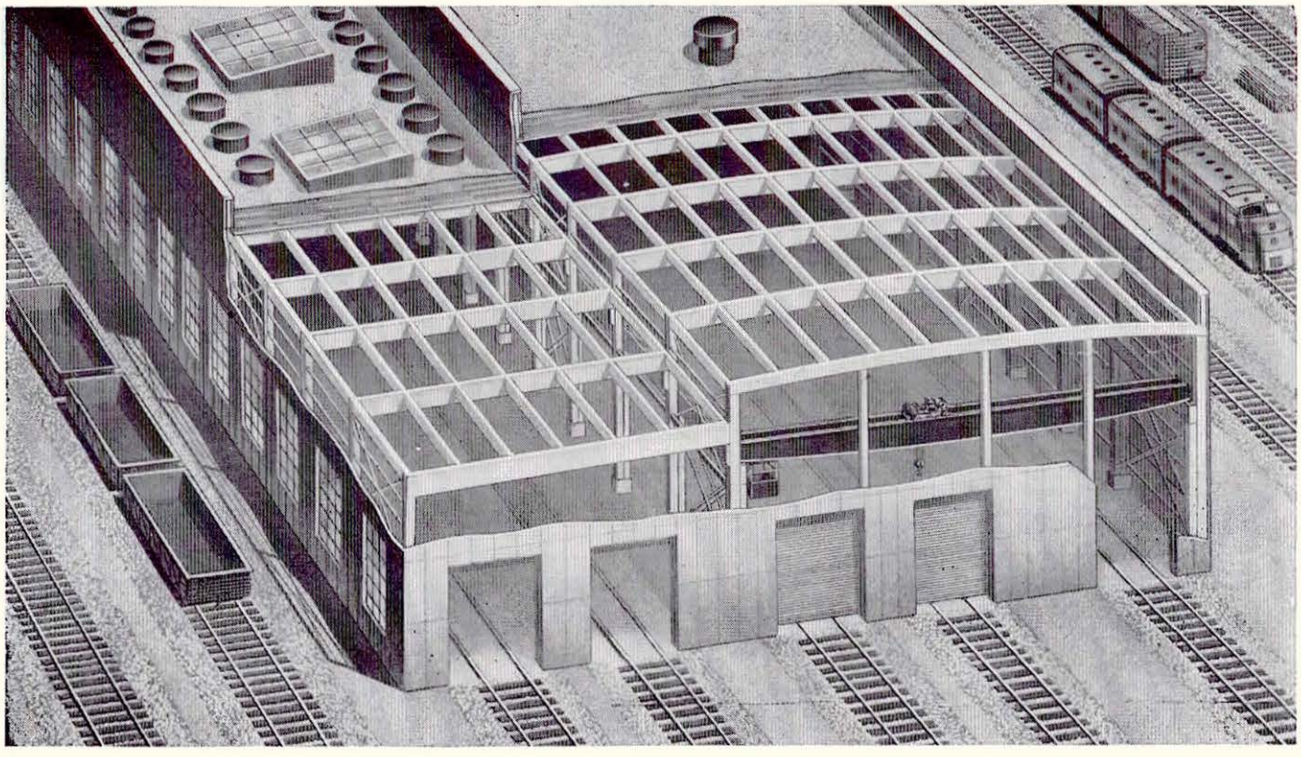
J. M. Prickett

manager, and since that time has been associated with that road, except for a year and a half with the B.&O. in 1913–14. With the K.C.S., he worked successively as secretary to general superintendent of transportation, secretary to the president, chief clerk to the general manager, and chief clerk to the president. In 1936, Mr. Prickett became assistant to the president, and in 1944 was elected to the vice-presidency from which he has now retired.

As reported in *Railway Age* February 11, **Leonard H. Murray** has been elected vice-president and secretary of the DULUTH, SOUTH SHORE & ATLANTIC, succeeding the late **P. L. Solether.** After being graduated from the University of Minnesota College of Law in 1938, Mr. Murray served as legal secretary to Mr. Justice Hilton of

Leonard H. Murray

the Minnesota Supreme Court. From 1940 to 1942 he was in private law practice, joining the Minnesota State



Build with Timber Trusses and Beams

...and get permanent, fire-resistant diesel-repair shops at genuinely low cost

YOUR DIESELS are housed in safety when your repair shops are built with timber trusses and beams by Timber Structures, Inc. Carefully engineered and precision fabricated, these units provide permanent, lightweight, fire-safe construction that will last for generations.

"Stay Put" Without Maintenance

These structural members are formed by glued lamination which joins thoroughly seasoned lumber under pressure by glues as permanent and strong as the wood. Pound for pound these glulam timbers are stronger than any commonly used material. They are dimensionally stable, free from seasoning action, and require little or no maintenance.

Open floor areas are possible in almost any span and as long as the jobsite permits. Any kind of roof decking may be used, including pre-moulded or cast-in-place panels.

Resistant to Destruction by Fire

Wood is one of the best of natural insulating materials, confining heat penetration to only one inch in 33 minutes of severe fire exposure. Heavy glulam timber units therefore retain structural strength and remain fully serviceable through fires which would destroy other material.

Since additional insulation is not needed, it isn't necessary to carry the tremendous dead loads required to get equal fire resistance with other material. When used with concrete or masonry side walls, heavy timber members receive the favorable insurance rates which their excellent fire resistance record has earned. Fire retardant treatments are available if further protection is desired.

Ask Us for Literature

Detailed information on glulam construction is contained in the booklet "Engineered Timber Construction". A copy is yours for the asking. See your nearest Timber Structures office, or use the coupon below.

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City_____ State_____

O.P.A. office as chief price attorney in the latter year. In 1944 he joined Henry S. Mitchell, now president of the D. S. S. & A., in the practice of law, specializing in railroad matters, and has been associated with Mr. Mitchell since that time, becoming assistant to president of the D. S. S. & A. in 1949.

FINANCIAL, LEGAL & ACCOUNTING

As reported in *Railway Age* February 11, page 84, **Richard J. Lally** has been appointed assistant general counsel of the CENTRAL OF NEW JERSEY at New York. Mr. Lally was born at Butte, Mont., on March 21, 1906, and attended Carrol College (A.B. 1926) and Columbia University Law School (LL.B. 1929). He entered railroad service on June 1, 1929, with the C.N.J. as attorney, and became assistant general solicitor on April 16, 1949. Mr. Lally was appointed commerce counsel on March 1, 1950, which position he held until his recent appointment.

John J. Danhof, whose retirement as general counsel for the NEW YORK CENTRAL at Detroit was announced by *Railway Age* February 4, started with the N.Y.C. in 1913 as an attorney in the law department, after having received the degree of doctor of jurisprudence from the University of Michigan in 1912. In 1920 he became assis-

John J. Danhof

tant general attorney for the N.Y.C. after serving a year with the U.S. Railroad Administration as solicitor. He became general attorney in 1930, and later that same year was appointed general counsel. Mr. Danhof has been president of the Detroit College of Law since 1940 and will continue in that capacity.

OPERATING

As reported in *Railway Age* February 25, **M. D. Partelow** has been appointed superintendent of stations of the ILLINOIS CENTRAL at Chicago, succeeding the late **W. M. Hale.** Mr. Partelow began his railway career as

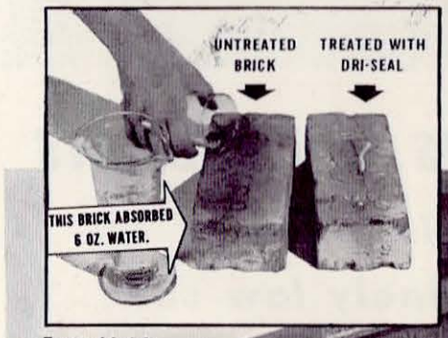
M. D. Partelow

a station clerk for the I.C. at Maroa, Ill., in 1915. He was named supervising agent at Chicago in 1943, and has been superintendent of the weighing, inspection, demurrage and storage bureau at Chicago since 1947.

T. W. Grose has been appointed trainmaster of the Handley coal district

Stop MOISTURE DAMAGE TO MASONRY STRUCTURES *with* MULE-HIDE *Dri-Seal*

A Colorless liquid Silicone compound



Treated brick repels moisture

Glenview Naval Air Station in Illinois—brick walls are safe from moisture damage because they have been treated with DRI-SEAL.

Damage from moisture penetration into masonry walls and structures can be prevented by application of MULE-HIDE DRI-SEAL. Minimizes structural deterioration—cracking, flaking, chipping of concrete, failure of mortar joints. Stops efflorescence. *Not just a surface coating*—penetrates to give permanent protection. Good primer for oil-base paint. Apply with spray or brush to protect any masonry.

DRI-SEAL FOR WOOD—Preserve wood structures with this penetrating, colorless compound—prevents moisture damage—rot, splitting, end-checking, grain-raising. Contains fungicide to prevent mildew, insect damage.

Write or call for further information—prices.

MULE-HIDE PRODUCTS "NOT A KICK IN A MILLION FEET"

The LEHON COMPANY • *Railroad Department*
4425 S. Oakley • Chicago 9, Illinois • LAfayette 3-0700

Carey FIRE-CHEX SHINGLES GO TO WORK FOR THE NEW YORK CENTRAL SYSTEM

put the brakes on roof modernization and upkeep costs

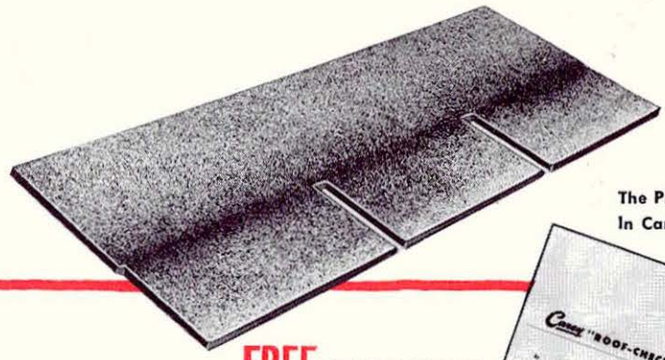
In the photo above you see the New York Central's passenger station at Mackinaw City, Michigan, recently re-roofed with Carey Fire-Chex asbestos-plastic shingles.

According to New York Central officials, Fire-Chex were selected for their ability to meet – at low cost – the requirements for "Class A" fire resistance, specified by the Underwriters. Fire-Chex are the only roofing of any kind ever rated "Class A" without underlayment by Underwriters' Laboratories, Inc.

Moreover, as the New York Central discovered, Fire-Chex require less labor to apply than rigid types of roofing. They are readily adaptable to unusual roof contours, can be applied easily by company forces.

And not only do Fire-Chex *look* good, they furnish a practical solution to the problem of maintenance. Made of Carey's patented asbestos-plastic, Fire-Chex contain more asbestos fiber than conventional asbestos-cement shingles – yet they are tough and pliable, not hard and brittle. No wonder they withstand the ravages of weather to a degree unknown before.

Whether your problem is one of roof design, replacement, repair or maintenance, it will pay you to consult with Carey. With over 78 years experience, and complete research facilities behind them, Carey products are the finest known to modern science – cost you less in the long run. Tell your Carey Industrial Sales Engineer about your problem – or write direct.



Carey

The Philip Carey Mfg. Co., Lockland, Cincinnati 15, Ohio
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FREE ROOF CHECK INSPECTION SERVICE — *by Carey roofing engineers!*

The famous Carey Roof Check Method is a FREE service that may save you untold expense for roof repair or replacement. Following inspection, you get a detailed, written report on the condition of your roof, the flashings, parapet walls, coping, gutters, etc., and recommendations for maintenance or repair. Mail the coupon today for details.

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THE PHILIP CAREY MFG. CO.
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Gentlemen:

Please send me all the details about the Carey Roof Check Inspection Service. I understand there is no obligation on my part.

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FIRM NAME.....

CITY.....ZONE....STATE.....

of the CHESAPEAKE & OHIO at Handley, W. Va., succeeding **R. N. Lynch,** who has been transferred to the Chicago division at Peru, Ind. Mr. Lynch replaces **W. K. Weaver, Jr.,** whose promotion to assistant superintendent of the Clifton Forge (Va.) division was reported in *Railway Age* February 11.

TRAFFIC

H. L. Lapointe, assistant to assistant traffic vice-president of the Canadian lines of the CANADIAN NATIONAL, has been appointed foreign agent at Toronto.

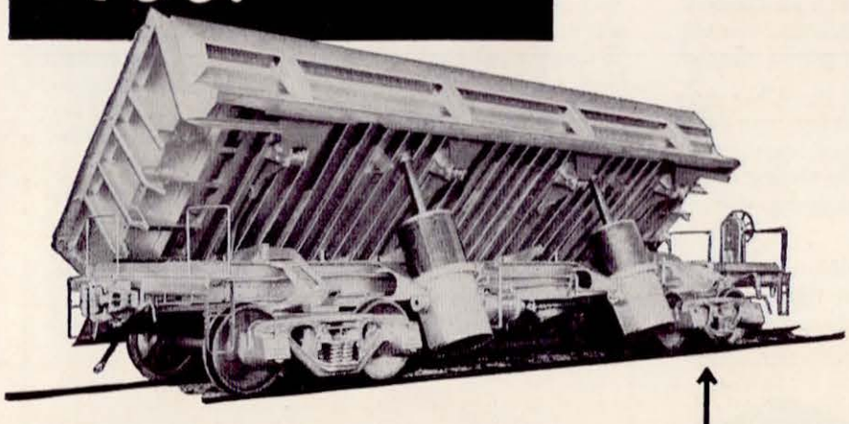
J. F. Falvey, assistant general freight agent of the NEW YORK, NEW HAVEN & HARTFORD, has been appointed general freight agent, with headquarters as before at Boston. **C. R. Goldrich** has been appointed assistant general freight agent there.

Dr. Poole Maynard, industrial geologist of the ATLANTIC COAST LINE, has been appointed consulting geologist, with headquarters as before at Atlanta, Ga. **C. W. Rankin** has been appointed manager of mail and express traffic at Wilmington, N. C.

Charles R. Murray, freight traffic manager of the CANADIAN NATIONAL at Montreal, in charge of rates, tariffs and divisions, has retired on pension, after a railway career of more than 44 years. **C. L. McCoy,** traffic manager of the Atlantic region at Moncton, N. B., succeeds Mr. Murray. Photographs and biographies of Messrs. Murray and McCoy were published in *Railway Age*, April 2, 1951, page 98, and April 30, 1951, page 60.

Arnath W. Knabe, industrial development agent of the BALTIMORE & OHIO at New York, has been appointed industrial agent at Baltimore, succeeding **W. I. Bishop,** who recently retired. **George E. Ference,** assistant industrial agent at Chicago, succeeds Mr. Knabe at New York.

BOOSTS EARNINGS TOO!



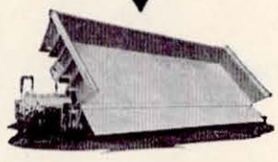
The Differential Air Dump Car has a way with operating expenses — cuts 'em down!

There's another pair of massive muscles on the other side of the car, too, means two-way dumping and greater flexibility.

They're built to take rough treatment — whether it's the slam-banging of the clam or the sudden dumping of tons of hot slag. These cars can take it and can come back faster for more.

Higher ratio of payload to dead weight! Fewer trips to the shop and shorter stays when they do go! Add all these up and it spells lower operating costs — another way to say "Boosted Earnings". Write for the full story on these cars.

DUMPS BOTH WAYS



Other Differential Products: Locomotives, Mine Cars, Mine Supply Cars, Rock Larries, Mantrip Cars, Dumping Devices and Complete Haulage Systems.

DIFFERENTIAL STEEL CAR COMPANY

FINDLAY, OHIO

SINCE 1915 — PIONEERS IN HAULAGE EQUIPMENT

SPECIAL

Lawson G. Tolleson, assistant personnel officer of the SOUTHERN SYSTEM, has been appointed chief personnel officer, with headquarters remaining at Washington, D. C. **Julian M. Ford,** assistant to personnel officer at Washington, succeeds Mr. Tolleson as assistant personnel officer. **Roy A. DeRossett,** personnel assistant at Washington, has been appointed assistant to personnel officer, succeeding Mr. Ford. **Thomas H. Porter,** time inspector at Washington, succeeds Mr. DeRossett as personnel assistant.

Mr. Tolleson was born on August 29, 1906, at Montgomery, Ala., and entered the service of the Southern in October

Lawson G. Tolleson

1924 as a clerk at Chattanooga, Tenn. He later served there as secretary to the general superintendent and from 1934 to 1944 was employed in the office of the general manager at Cincinnati.

Mr. Tolleson was promoted to assistant to personnel officer at Wash-

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo Oil R.R.

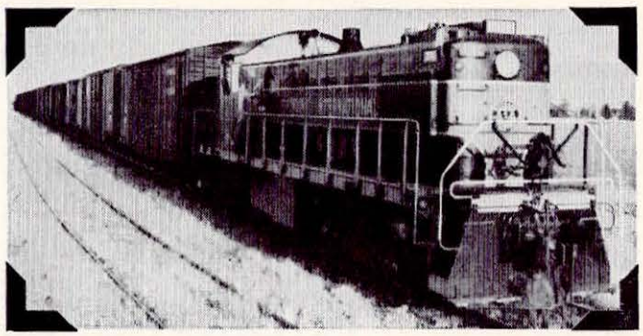
UNIT Alco Diesel – 6 cyl. 12½" x 13" – 1000 H.P.

SERVICE Mountain haul – Heavy snow, extreme cold

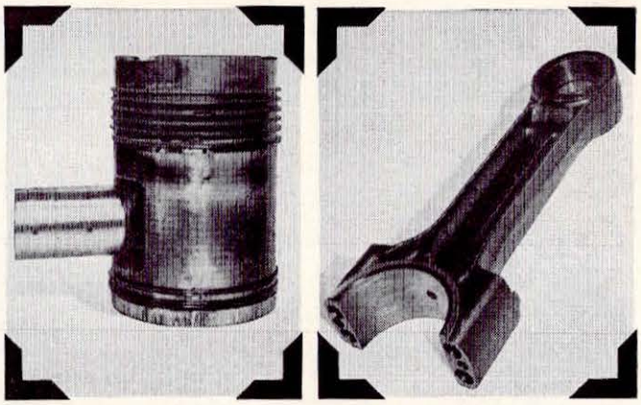
LOCATION Spokane, Wash.–Yahk, B.C.

FIRM Spokane International R.R. Co.

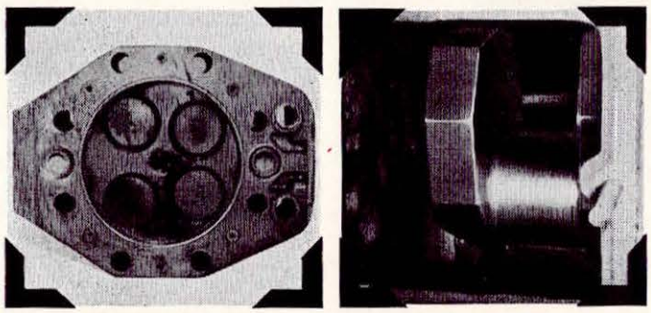
Engines in "perfect condition" after year of toughest service!



LUBRICATED WITH RPM DELO Oil R.R., nine new diesels owned by the Spokane International R.R. Company were kept in regular service for one year. The winter was exceptionally severe and the locomotives bucked heavy snow almost daily. They worked or were idled in temperatures that often for periods of ten days averaged from 20 to 40 degrees below zero.



On inspection at the end of that time there were no accumulations of sludge in oil systems and the engines were in "perfect condition" as pictures of parts from one of them indicate.

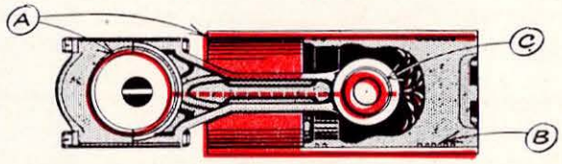


NO CARBON had collected on the cylinder head and all rings were free and functioning properly. Connecting-rod and main bearings and wristpin were within standard tolerance. Measurement of the liner showed less than 0.001 inch wear.

REMARKS: The Spokane International Railroad provides an important connecting service between transcontinental lines through Spokane and the Canadian Pacific to the north. Most of their trackage is in northern Idaho where severe weather and other conditions often make operation difficult. RPM DELO Oil R.R. will meet the toughest weather or operational conditions in all locomotive diesel engines.

RPM DELO LUBRICATING OILS

How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



A. Special additive provides metal-adhesion qualities . . . keeps oil on parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer . . . prevents ring-sticking. Detergent keeps parts clean . . . helps prevent scuffing of cylinder walls.

C. Special compounds stop corrosion of bushing or bearing metals and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

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THE CALIFORNIA COMPANY
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STANDARD OIL COMPANY OF TEXAS
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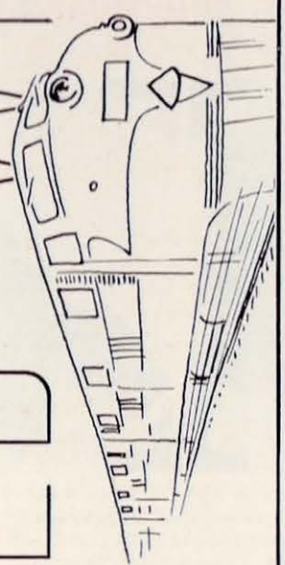
WINDSHIELD AIR-PUSH WIPERS



Maintenance manuals on Air-Push wipers available upon request. Write today!

. . . over 20 years of dependable service to the railroad industry

Sprague DEVICES, INC.

MICHIGAN CITY, INDIANA

ington in April 1944 and became assistant personnel officer there on February 16, 1948.

ENGINEERING AND SIGNALING

J. A. Holmes has been appointed assistant construction engineer of the SOUTHERN PACIFIC at San Francisco.

James Hope has been appointed engineer of work equipment for the CHICAGO, ROCK ISLAND & PACIFIC at Chicago. He has been vice-president in charge of coal mining operations of the Rock Island Improvement Company, a Rock Island subsidiary, at Peoria.

OBITUARY

Edward A. Dougherty, whose obituary notice appeared in *Railway Age* March 10, had served as chief engineer of the NEW YORK CENTRAL'S Lines West of Buffalo, N. Y., since 1945. He had spent his entire career with the Central after graduation from Columbia University's School of Mines in 1910, starting as chairman, and becoming assistant engineer in the valuation department in 1917. Subsequently, he was promoted to assistant engineer

Edward A. Dougherty

in the office of the corporate chief engineer and assistant to president, and later to designing engineer at New York. In 1935 Mr. Dougherty was appointed assistant chief engineer, and in 1938 became assistant to vice-president, Lines West, at Chicago. He was appointed assistant general manager at Cleveland in 1943, and remained there until 1945.

Jean Marchand, 36, public relations officer of the CANADIAN PACIFIC at Quebec, Que., died on March 6.

Theodore E. Smith, 52, general passenger agent of the PITTSBURGH & LAKE ERIE, died at Pittsburgh on February 29.

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HIGH GRADE TREATED

TIES

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The International Dating Brand

What to Expect from "INTERNATIONAL"

1. SOUND, WELL-SEASONED TIMBER
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A modern means of reducing operating costs, increasing efficiency and improving service to your customers. Applicable to hump yard operations, flat yard switching, transfer operations and industrial pick ups. The yard master has "electronic eyes" to "see" every engine.

END TO END

The 1952 means of coordination between caboose and engine. The answer to moving one hundred car trains with all the assurances of conductor-engineer contact required for speedy movement. End to End applications bring you returns on your investment in reduction of running time, per diem costs, fewer "break-in-twos" and less time lost when trouble develops.

WAYSIDE TO TRAIN

Operator to conductor contact anywhere on the railroad will speed up operations. No lost time required to use wayside telephones. Train speeds can be regulated to cover existing conditions without any full and costly stop.

TRAIN TO TRAIN

The establishment of End to End radio automatically provides train to train operation. Verbal assurance between trains that "all is black" in passing operations. Verbal supplements of signal information received from dispatcher or operator.

WAYSIDE TO WAYSIDE

Supplements dispatch lines and replaces dispatch line when wires are down. Wayside to wayside communication may be extended over many miles.

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BE RIGHT WITH MOTOROLA

It costs less to install and maintain, year after year, than all others.

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Current Publications

PAMPHLETS

You and the Press. 16 pages, illustrations. Railway Express Agency, Department of Personnel and Public Relations, 230 Park ave., New York 17. Free.

Published to assist employees of the Railway Express Agency in maintaining good press relations through an understanding and appreciation of the objectives of editors, reporters, and broadcasters and the manner in which they work, this little booklet covers such subjects as reporters and editors; newspapers, wire services, radio and television; news over the radio and television; how to get along with the press; what makes news; how to know your newspaper people; some "don'ts"; the company publicity program; and newsworthy subjects.

Scenes On and Along St. Louis Southwestern Railway Lines. 32 pages, illustrations. Public Relations Department, St. L. S. W. Single copies available upon request to St. Louis Southwestern Railway, St. Louis 2, Mo.

A picture story of the Cotton Belt at work. The railroad's motive power is traced from the "Moguls" and "Americans" of the 1880's, through oil-fired 4-8-4's, to today's diesel switching and road locomotives. Other pictures show locomotive maintenance, freighthouse operation, switching, passenger service, C.T.C., yard communications, track and bridge maintenance, etc. The back cover carries a map of the Cotton Belt and its principal connections.

PERIODICAL ARTICLES

Railroads Take Another Look. Business Week, February 23, 1952, pp. 128-133. McGraw-Hill Publishing Company, 330 W. 42nd st., New York 18. Single copies, 25 cents.

That passenger service may not really be the money loser the railroads think, is the theme of this article, which tells how three roads—the New York Central, the Pennsylvania and the Chesapeake & Ohio— are involved in studies to shake out losses that are mere bookkeeping.

Galloping Goose Puts in for Retirement. Business Week, February 23, 1952, pp. 134-139. McGraw-Hill Publishing Company, 330 W. 42nd st., New York 18. Single copies, 25 cents.

"The narrow-gauge 'Galloping Goose' of southwestern Colorado has reached the end of the line. For 60 fighting years the Rio Grande Southern, a little railroad that had no right to be born, puffed around the sharp curves and up the steep grades of the rugged Colorado Rockies. . . . On its headstone might be carved the epitaph: 'Born of over-optimism; died of modern highways.'" So says Business Week in its introduction to this interesting article on the next-to-last Colorado narrow-gauge.

TRADE PUBLICATIONS

Clean Diesel Tanks Last Longer. 4 pages, illustrations. Huron Manufacturing Company, 3240 East Woodbridge st., Detroit 7, Mich.

This folder discusses application of Huron plugs on diesel water and fuel tanks to facilitate washing and draining at regular intervals to prevent corrosion.

The Conquest of Impact on American Railroads. 26 pages, illustrations. Waugh Equipment Company, 420 Lexington ave., New York 17.

This booklet opens with a brief history of early efforts to lessen impact in railroad freight transportation through use, first, of mechanical cushioning, and, second, of friction draft gear. It then tells how in 1928 the Waugh Equipment Company learned of a rubber car-cushioning device developed by George Spencer, Moulton Company of England, to serve the same purpose as an American friction draft gear; and how, through subsequent negotiations, Waugh became American licensees of Moulton and, so, began its research and development work to adapt the rubber draft gear to American equipment. It discusses the original Waugh design of rubber draft gear as applied to a limited number of passenger cars in 1931; the Twin Cushion principle developed between 1931 and 1935; the first passenger type Twin Cushions placed in road service for test purposes on a heavy passenger type locomotive and two cars of the New York Central, and the subsequent adaptation of the Twin Cushion for passenger-car service. The consideration given to the use of Waughmat Twin Cushions, beginning in the late 1930's, to reduce lading damage claims, is also discussed, as well as the specification tests of the WM-4-6 type conducted by the A.A.R. in 1941; the pocket length compression tests conducted from April 13, 1942, through March 15, 1949, and the A.A.R. weather and synthetic rubber check tests. Described also are the principal features of the Waughmat rubber and steel plate. Sectional drawings show details of the Twin Cushion design.

BOOK

The Billerica & Bedford 2-Ft. Gauge Railroad. 27 pages, drawings. Reprinted for the Railroadians of America. Copies available from H. L. Tilton, 763 West Inman ave., Rahway, N. J. $2.50.

Book No. 4 of the Railroadians of America is a reproduction of a booklet issued by the "Railroad Gazette" (a predecessor of *Railway Age*) in 1879, describing construction details, location and rolling stock of the first two-foot gage railroad in the United States. The "Railroad Gazette" provided a very elaborate description which gave an insight into the theories quite prevalent during the period following the Civil War, that a narrow-gage railroad could provide all service required at a much lower overhead cost than a standard-gage road. The booklet contains numerous drawings showing all technical details, from track work to the diminutive cars and locomotives that operated over the line.

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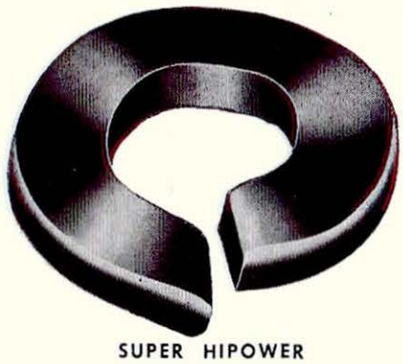

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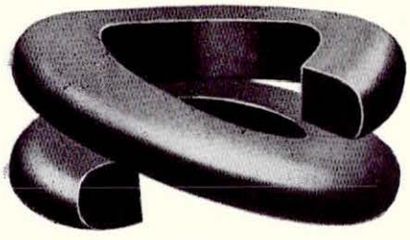
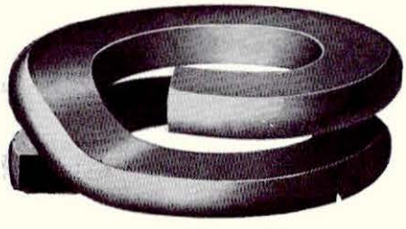
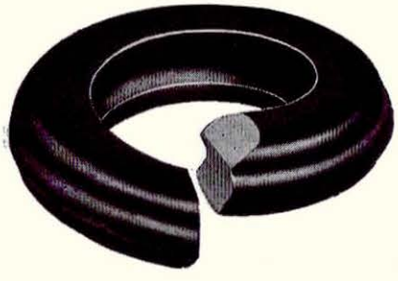


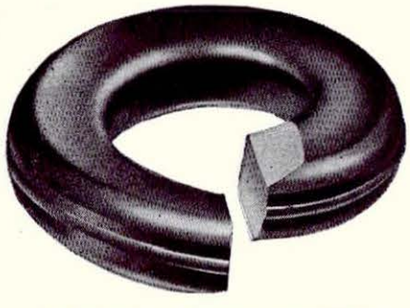
DOUBLE HIPOWER



THACKERAY



SUPER COLLAR GROOVED



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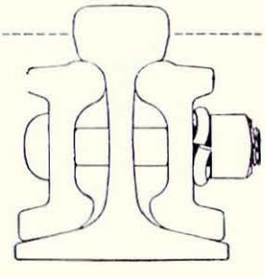

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Patented C-D dual-vibrator circuit assures uninterrupted radio communications en route, *plus* major savings on initial installation and maintenance. *Write for technical data: Cornell-Dubilier Electric Corp., Dept RA-32, Indianapolis Division, 2900 Columbia Avenue, Indianapolis, Ind.* Affiliate Member A.A.R.

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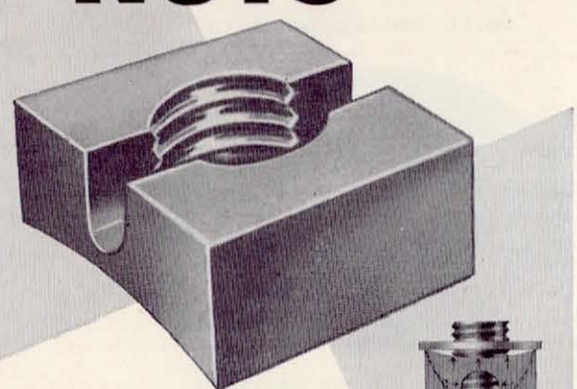

Side view, reduced, showing areas of friction lock.

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To tie users... especially our Western Railroads

NOW... Vapor-Drying* for Douglas Fir Crossties, too.

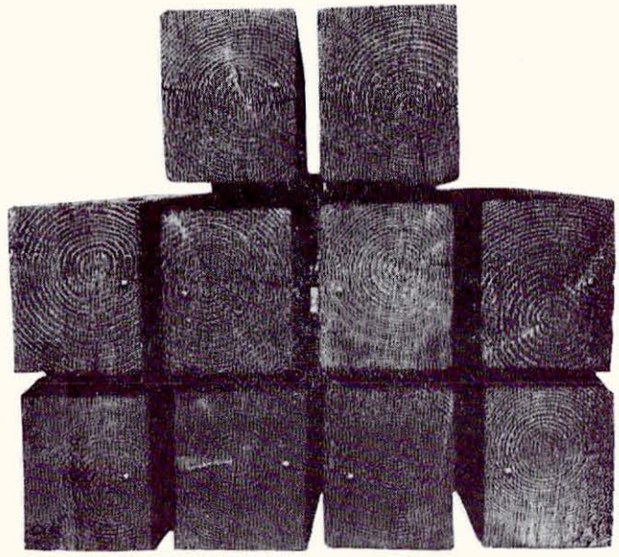
No seasoning period; less splitting; are among benefits.

SEVERAL Eastern and Southern roads are using Vapor-Dried oak, gum and mixed hardwood ties, thereby eliminating the long expensive air seasoning period. Less checking and splitting, complete sterilization, deeper penetration and wider distribution of preservatives, are some of the advantages obtained by Vapor-Drying these species.

And now, news of interest to Western roads. Boxed heart Douglas fir crossties (and there are lots of them) have been Vapor-Dried and treated with the standard preservative used by one of the larger Western roads.

Some of these ties are now on a yard at Corvallis, Oregon waiting to be installed with their air-seasoned controls. We invite you to inspect them. We think you will agree that they show less splitting than their air-seasoned counterparts.

If you are interested in getting longer-lasting ties, let us give you the Vapor-Drying story. Write to Vapor-Drying Division, Tyalor-Colquitt Co. today.



• Boxed heart Douglas fir crossties after Vapor-Drying and treatment. Clearly visible are the annular rings and the absence of splits.

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40- & 50-Ton Capacity, Length 70' and 74'

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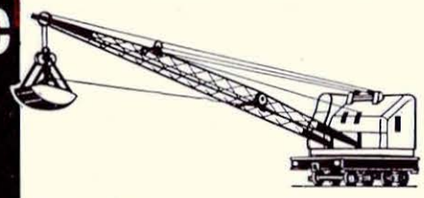

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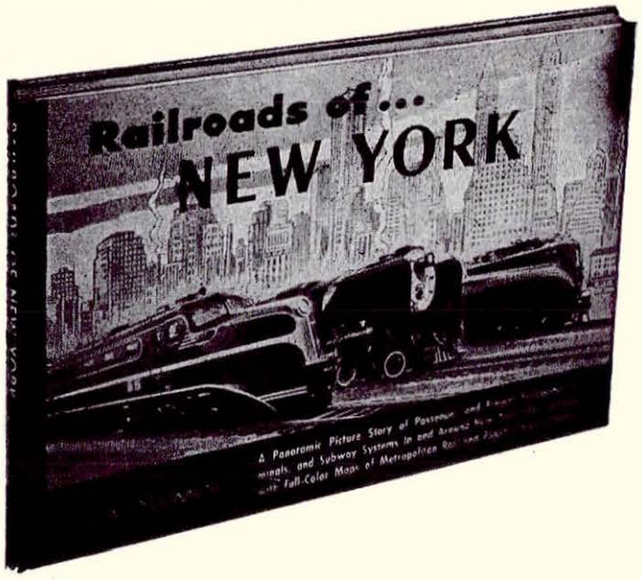

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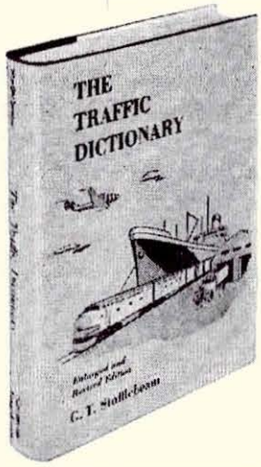

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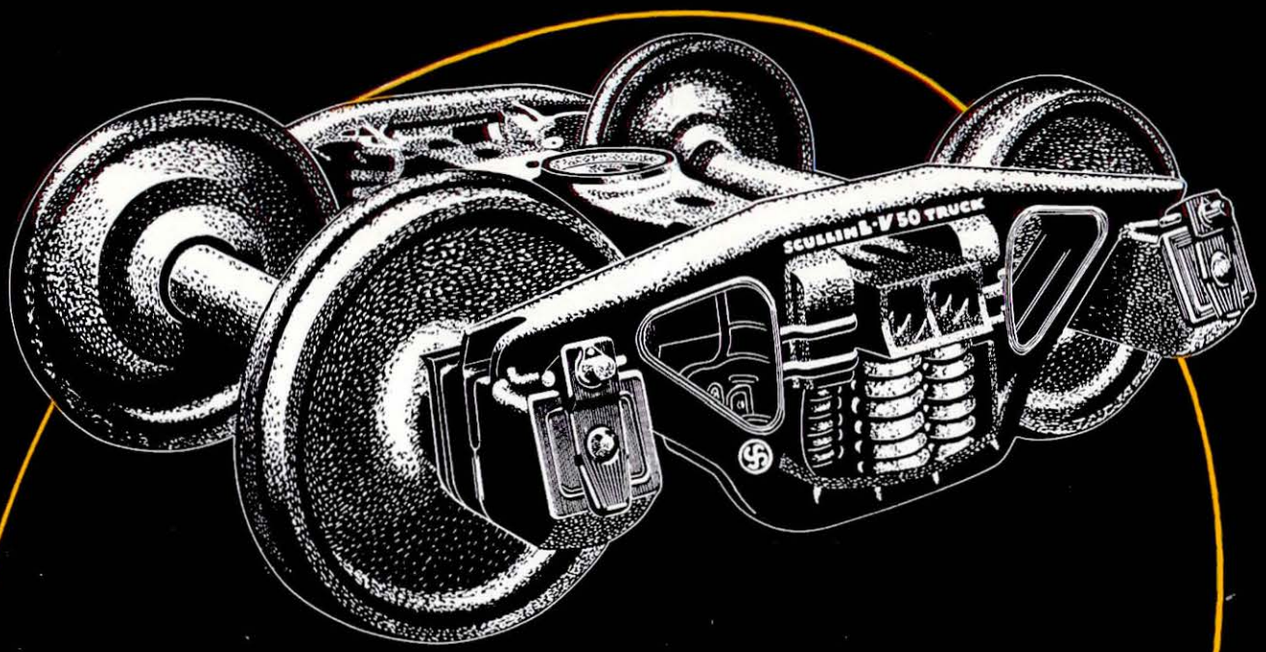

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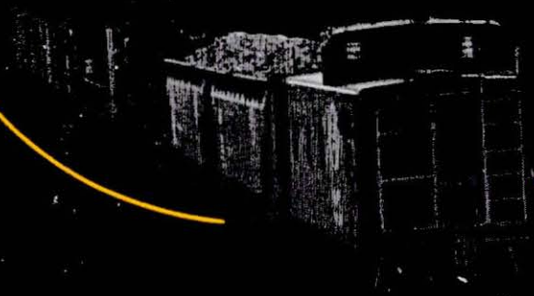

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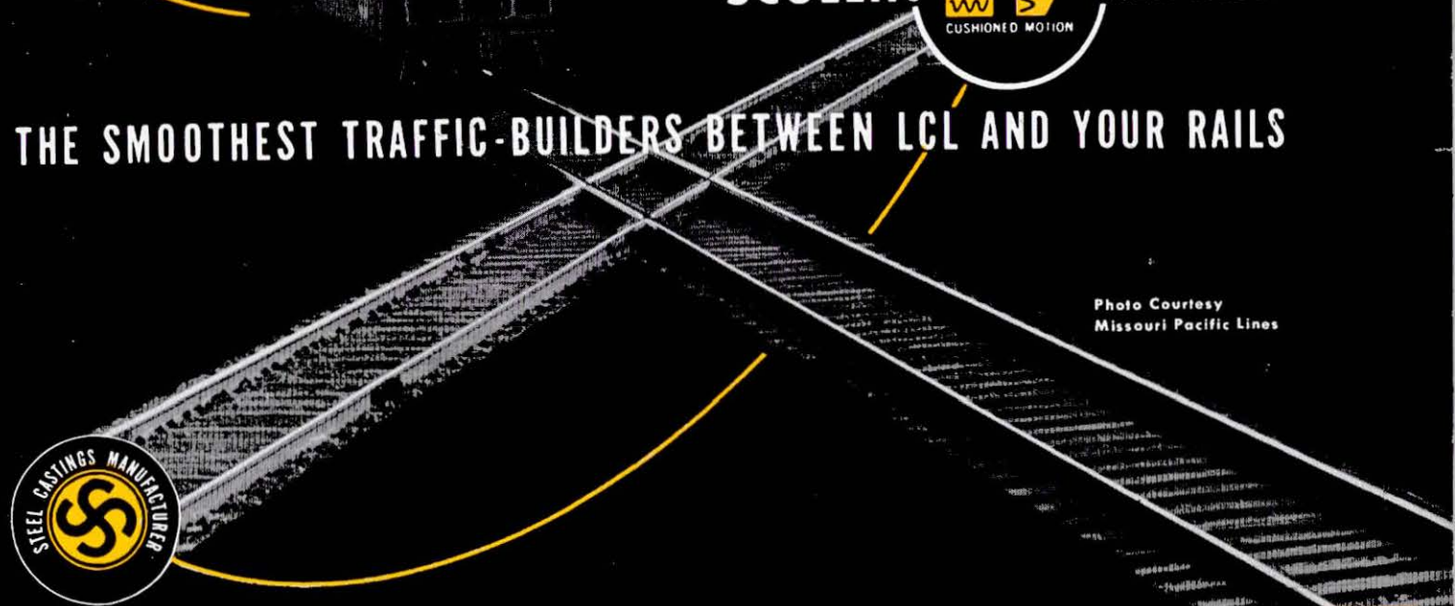

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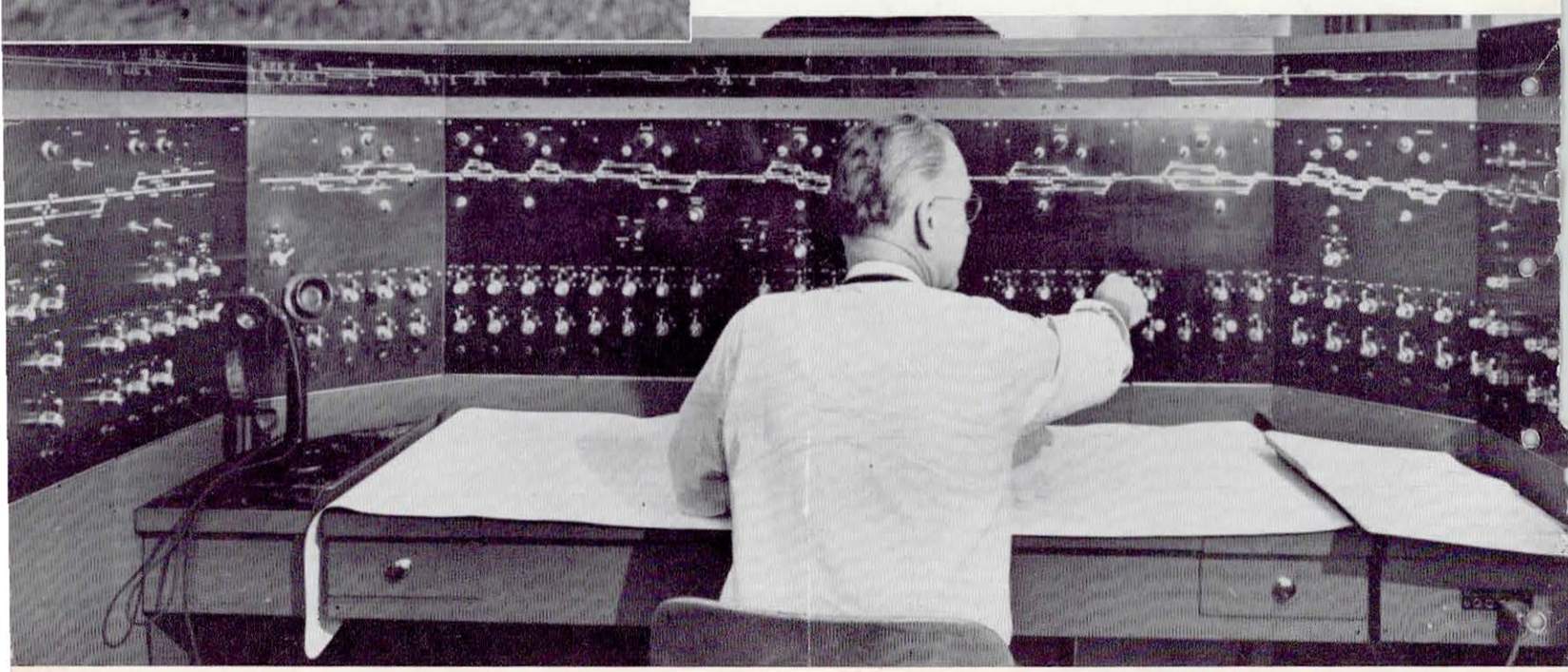

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